3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

The purpose of this chapter is to describe the existing environment potentially affected by the project alternatives and the potential direct, indirect, and cumulative effects (or impacts) of activities pertaining to each alternative. Resources considered include the following:

Natural Resources

- Biological resources
- Earth and water resources and floodplain management
- Air quality

Human Resources

- Land use
- Aesthetics or scenic resources
- Recreational resources
- Socioeconomics
- Transportation and traffic
- Noise

Cultural Resources

- Archaeological and historic resources

The sections that follow this introduction describe the existing environment and address the potential impacts on each resource. Most sections contain information characterizing the existing conditions followed by a discussion of the environmental consequences (including a description of impacts by alternative, and cumulative effects).

Impacts are defined as modifications to the existing condition of the environment and/or probable future condition that would be brought about by a proposed undertaking. Impacts can be beneficial (positive) or adverse (negative) and can result from the project directly or indirectly. Impacts can be permanent and long lasting (long term) or temporary (short term). Long-term impacts are defined as those that would remain substantially throughout and beyond project construction and operation. Short-term impacts are defined as those changes to the environment during construction that would revert to preconstruction conditions at or within a few years of the end of construction, either naturally or through mitigation. Impacts can vary in degree from no change or only slight discernible change to full modification of the environment.

Using the information regarding the existing environmental conditions and the description of the alternatives (Chapter 2.0), the types and magnitudes of impacts anticipated to occur from each alternative were identified and quantified to the extent practicable given this conceptual stage of the project. Impact discussions in this chapter are based on the types and amounts of disturbance estimated to occur under each alternative and cumulatively with other planned projects in the area.

Cumulative impacts also were considered in this document. Cumulative impacts result when the effects of an action are added to or interact with other effects in a particular place and within a particular time. For example, one construction project may not have an effect on the noise levels in a particular area but if several construction projects occur at the same time, then there may be an effect on noise levels in the area. It is the combination of these effects, and any resulting environmental degradation, that are the focus of a cumulative impact analysis. Cumulative impact analyses have been incorporated in each resource section. Projects within the vicinity of WestWorld that have been considered in the assessment of cumulative impacts include the following reasonably foreseeable future projects: (1) McDowell Mountain Ranch Park and Aquatic Center, and (2) general development north and east of the WestWorld property boundary, including roadway development/improvements.

McDowell Mountain Ranch Park and Aquatic Center includes development of an aquatic fitness center, skate park, playground, picnic area, restroom facilities, and additional parking. This proposed development includes numerous off-site traffic improvements, including a planned "loop road" under the Thompson Peak Parkway Bridge. The McDowell Mountain Ranch Park and Aquatic Center is proposed to be located just south of Thompson Peak Parkway between the Sanctuary Golf Course and Desert Canyon Elementary and Middle schools. The proposed "loop road" would connect from the north side of westbound lanes of Thompson Peak Parkway, extend slightly north and west, turn south and cross under the Thompson Peak Parkway Bridge into the park and aquatic center. The road also would connect to the eastbound lanes from the south side of Thompson Peak Parkway between the bridge and North 102nd Place (the entry to Desert Canyon Elementary and Middle schools).

General Development near WestWorld is projected to occur in the area to the north and northeast of the site extending to Bell Road. Future development to the north includes commercial buildings and light industrial uses, as well as roadway improvements. A residential community in its initial development phase is located north and east of the project area.

3.1 BIOLOGICAL RESOURCES

3.1.1 Affected Environment

Vegetation Resources

The project area is located in the Sonoran Desert region, which is characterized by low annual precipitation, warm to hot summer temperatures, and mild to warm winter temperatures. The project area is an ecotone with species shared between the Lower Colorado River Valley and the Arizona Upland subdivisions of the Sonoran Desertscrub (Brown 1994). Native plants,

especially within the northern portion of the project area, contain components more typical of the Arizona Upland subdivision including paloverde (*Cercidium* sp), mesquite (*Prosopis* sp), creosote bush (*Larrea tridentata*), and a limited variety of cacti and shrubs. A majority of the land within the project area has been previously disturbed. Little or no natural vegetation remains within the area as a result of previous developments and ongoing uses. Vegetation that does occur within the project area consists mainly of scattered mesquite trees. In addition, numerous small ephemeral washes and the Rio Verde Canal (which crosses the project area) contain xeroriparian habitat dominated by mesquite and paloverde trees. Undisturbed lands near the project area are located to the northeast and northwest; these lands contain natural vegetation, where creosotebush and other low growing plants are the dominant plant species. Lands south of the project area do not contain natural native vegetation as a result of the development of the CAP canal and commercial and residential developments.

General Wildlife

Wildlife of the area is typical of similar sites in this region of the Sonoran Desert. However, wildlife within the project area is impoverished due to previous developments and by the removal of vegetation. There are no natural water resources in the area capable of supporting fish. Reptile species known to occur in the Sonoran Desert and with potential to occur within the project area include tree lizard (*Urosaurus ornatus*), western whiptail (*Cnemidophorus tigris*), western diamondback rattlesnake (*Crotalus atrox*), and desert spiny lizard (*Sceloporus magister*) (Brown 1994). Bird species known to occur in the Sonoran Desert and with potential to occur within the project area include the following (Brown 1994):

- Mourning dove (*Zenaida macroura*)
- White-winged dove (*Zenaida asiatica*)
- Verdin (*Auriparus flaviceps*)
- Cactus wren (*Campylorhynchus brunneicapillus*)
- Pyrrhuloxia (*Cardinalis sinuatus*)
- Gilded flicker (*Colaptes auratus*)
- Gila woodpecker (*Melanerpes uropygialis*)

Mammals known to occur in the Sonoran Desert and with potential to occur in the project area include black-tailed jackrabbit (*Lepus californicus*), desert cottontail (*Sylvilagus audubonii*), coyote (*Canis latrans*), round-tailed ground squirrel (*Spermophilus tereticaudus*), and the white-throated woodrat (*Neotoma albigula*) (Brown 1994).

Threatened and Endangered Species

The Endangered Species Act of 1973, as amended, establishes a Federal program to conserve, protect, and restore threatened and endangered plants and animals and their habitats. The

Endangered Species Act specifically charges Federal agencies with the responsibility of using their authority to conserve threatened and endangered species. All Federal agencies must ensure any action they authorize, fund or carry out is not likely to jeopardize the continued existence of an endangered or threatened species or result in the destruction of critical habitat for these species.

The species list for Maricopa County maintained by the U.S. Fish and Wildlife Service (USFWS) contains 11 endangered, 2 threatened species, and 1 proposed endangered species. The 14 species along with their habitat requirements, which were derived from a generic list of species that could potentially occur anywhere in Maricopa County, are shown in Table 3-1. The listed fish species, California brown pelican, bald eagle, Yuma clapper rail, and southwestern willow flycatcher are found in or adjacent to aquatic habitats and/or dense riparian ecosystems that are not present within or adjacent to the project area. In addition, the project area does not contain suitable habitat for the Arizona agave, Arizona cliffrose, Sonoran pronghorn, Mexican spotted-owl, and lesser long-nosed bat. With respect to the cactus ferruginous pygmy-owl, the project area is not within the Phoenix urban area (excluded from survey recommendations); the urban area exclusion boundaries end at Frank Lloyd Wright Boulevard to the south and Pima Road to the east. Therefore, the project area is in survey zone 3, where the USFWS recommends surveys for pygmy-owls within suitable habitat. However, the disturbed nature of the project area, and its lack of suitable vegetation for nesting, foraging, or movement, makes the area unsuitable as pygmy-owl habitat during any portion of its life history. In addition, lands to the northeast and northwest of the project area do not contain columnar cactus or trees with trunks 6 inches or greater in diameter, at 4.5 feet above the ground, that may provide nesting habitat for the pygmy-owl. With the lack of suitable habitat within the project area and on surrounding lands, and minimal loss of vegetation in the project area, pygmy-owl surveys are not necessary.

No designated critical habitat for any listed species occurs within or adjacent to the project area.

TABLE 3-1
FEDERALLY LISTED ENDANGERED, THREATENED, AND PROPOSED SPECIES FOR MARICOPA COUNTY, ARIZONA

Species	Status[1]	Habitat Requirements
Arizona agave *Agave arizonica*	E	Transition zone between oak-juniper woodland and mountain mahogany-oak scrub
Arizona cliffrose *Purchia subintegra*	E	Characteristic white soils of tertiary limestone lakebed deposits
Bald eagle *Haliaeetus leucocephalus*	T	Large trees or cliffs near water (reservoirs, rivers, and stream with abundant prey)
Cactus ferruginous pygmy-owl *Glaucidium brasilianum cactorum*	E	Riparian woodlands, mesquite bosque, Sonoran desertscrub, semidesert grasslands, and Sonoran savanna grassland communities
California brown pelican *Pelecanus occidentalis californicus*	E	Coastal land and islands; species found around many Arizona lakes and rivers
Desert pupfish *Cyprinodon macularius*	E	Shallow springs, small streams, and marshes
Gila topminnow *Poeciliopsis occidentalis occidentalis*	E	Small streams, springs, and cienegas vegetated shallows

TABLE 3-1
FEDERALLY LISTED ENDANGERED, THREATENED, AND PROPOSED SPECIES FOR MARICOPA COUNTY, ARIZONA

Species	Status[1]	Habitat Requirements
Lesser long-nosed bat *Leptonycteris curasoae yerbabuenae*	E	Desertscrub habitat with agave and columnar cacti present as food plants
Mexican spotted owl *Strix occidentalis lucida*	T	Nests in canyons and dense forests with multi-layered foliage structure
Razorback sucker *Xyrauchen texanus*	E	Riverine and lacustrine areas, generally not in fast-moving water and may use backwaters
Sonoran pronghorn *Antilocapra Americana sonoriensis*	E	Broad intermountain alluvial valleys with creosote-bursage and paloverde-mixed cacti associations
Southwestern willow flycatcher *Empidonax traillii extimus*	E	Cottonwood/willow and tamarisk vegetation communities along rivers and streams
Yuma clapper rail *Rallus longirostris yumanensis*	E	Fresh water and brackish marshes
Gila chub *Gila intermedia*	PE	Pools, springs, cienegas, and streams

SOURCE: U.S. Fish and Wildlife Service (http://arizonaes.fws.gov) June 2003
NOTES: [1] E = Endangered, T = Threatened, PE = Proposed Endangered

3.1.2 Environmental Consequences

Potential impacts on vegetation resources, general wildlife, and threatened and endangered species are discussed in the following sections. A detailed impact assessment has been completed for each alternative. The impact assessment was conducted to determine the effect of each alternative on biological resources, including vegetation and wildlife. Site-specific factors considered include the nature of the potential losses in vegetation and associated species habitat that would result from construction and operation of the new facilities.

No-Action Alternative

Vegetation Resources

The majority of the project area contains little or no natural vegetation due to previous developments. Native vegetation that does exist within the project area occurs on the State Trust Land and the 5-acre parcel northeast of the existing WestWorld boundaries.

Under the No-Action Alternative, existing natural and landscaped vegetation occurring within the project area would not be removed or disturbed. In addition, natural vegetation occurring outside the existing WestWorld boundaries would not be disturbed. Therefore, the No-Action Alternative would not result in any impacts on the vegetation resources.

General Wildlife

The project area contains suitable habitat for a variety of small mammals, lizards, and bird species, identified in Section 3.1.1. Under the No-Action Alternative, vegetation within and outside the existing WestWorld would not be removed or disturbed and the existing habitat

would continue to support native wildlife and vegetation. Therefore, the No-Action Alternative would not have any impacts on native wildlife.

Threatened and Endangered Species

The project area contains very little natural vegetation and does not contain suitable habitat required to support individuals or populations of federally listed threatened or endangered, or proposed threatened or endangered species. Therefore, the No-Action Alternative would not impact any federally listed threatened or endangered species.

Proposed-Action Alternative

Vegetation Resources

Under the Proposed Action, impacts on native vegetation resources would occur from the development of a new boarding facility for horses and additional automobile and RV parking on approximately 68 acres of State Trust Land (Parcels A and B) and the 5-acre parcel north of the WestWorld boundary. Even though this area has been partially disturbed, it does contain scattered mature saguaros and barrel cacti, and ironwood, mesquite, and paloverde trees, which would be impacted. Native vegetation that could not be designed around would be removed consistent with the Arizona Native Plant Law and the Scottsdale zoning ordinance for native plant protection (Ord. No. 2262, §1, 8-15-89), after coordination with Reclamation. As mitigation, salvaged native plants would be replanted on site.

General Wildlife

Although the project area has been partially disturbed, the Proposed Action would require that all native vegetation be removed for the construction of the new horse boarding facility and automobile and RV parking on the State Trust Land and the 5-acre parcel north of the WestWorld boundary. As a result, there would be a loss of suitable habitat inhabited by native wildlife species. Individual wildlife species and small local populations would be permanently displaced from this area.

Threatened and Endangered

The project area contains very little natural vegetation on approximately 73 acres and does not contain suitable habitat required to support individuals or populations of federally listed threatened or endangered, or proposed threatened or endangered species. Therefore, it is anticipated the Proposed Action would not impact any federally listed threatened or endangered species.

Modified-Action Alternative

Vegetation Resources

Impacts on vegetation resources would be similar to those impacts associated with the Proposed Action with the following exception. The Modified Action would not include the development

for a new horse boarding facility on approximately 10 to 12 acres of State Trust Land (Parcel B) north of the WestWorld boundary. This parcel of State Trust Land is one of the relatively undisturbed areas. Therefore, under the Modified Action, the impacts on vegetation resources would still occur, but less vegetation removal would occur compared to the Proposed Action (between about 61 to 63 acres instead of 73 acres). Similar to the Proposed Action, salvaged native plants would be replanted on site.

General Wildlife

Impacts on wildlife would be similar to those impacts associated with the Proposed Action with the following exception. Less displacement of wildlife would occur compared to the Proposed Action because the horse boarding facility would not be developed on approximately 10 to 12 acres of State Trust Land (Parcel B) that have suitable wildlife habitat.

Threatened and Endangered Species

The project area contains very little natural vegetation and does not contain suitable habitat required to support individuals or populations of federally listed threatened or endangered, or proposed threatened or endangered species. Therefore, it is anticipated the Modified Action would not impact any federally listed threatened or endangered species.

Cumulative Impacts

Cumulative impacts on vegetation and wildlife from ongoing development would include the removal of additional native vegetation, which would further reduce general wildlife habitat in the area. Plant salvage requirements, as well as planned open space and landscaping, would partially reduce the loss of vegetation and habitat, providing some suitable habitat for various wildlife species. No cumulative impacts would occur on presently listed threatened or endangered species.

3.2 EARTH AND WATER RESOURCES AND FLOODPLAIN MANAGEMENT

3.2.1 Affected Environment

Earth Resources

WestWorld is located in the Sonoran Desert section of the Basin and Range physiographic province, which is typified by deep, broad alluvial valleys separated by steep, discontinuous subparallel mountain ranges. WestWorld is located in a northwest-trending structural basin within Paradise Valley that is bounded on the east and northeast by the McDowell Mountains and on the south and west by the Phoenix Mountains and Union Hills.

Surficial soil types consist of sandy gravelly loam to gravelly sandy clay. The majority of the soils are classified as gravelly loam. A loam is defined as a soil type that is composed of minor

amounts of clay particles. A 210-foot soil boring drilled in the vicinity of the WestWorld property by Brown and Caldwell (1997) reveals that the subsurface geology of the area is made up of felsic sand and gravel from the land surface to 210 feet below land surface (bls). From 210 feet bls to the water table at 420 feet bls the subsurface geology was described as mostly silty clay with some gravelly clay units (WestWorld Golf Course Permit Application, May 25, 1999).

In portions of southern Arizona, particularly in several broad alluvial-filled basins, excessive groundwater withdrawal has caused land subsidence. An area of land subsidence has been identified by the Arizona Department of Water Resources (ADWR) Hydrology Division within the north Scottsdale area and is centered around the Scottsdale Municipal Airport (approximately 1.5 miles southwest of WestWorld). The subsidence occurring in this area is roughly one inch per year.

Groundwater

The project area is located within the East Salt River Valley subbasin of the Phoenix Active Management Area, as designated by the ADWR, where use of groundwater is highly regulated and restricted. This subbasin spans over 1,710 square miles reaching from areas north of Cave Creek to areas south of Chandler, Arizona. The subbasin where the project area is located is further refined geographically and is termed the Paradise Valley Basin.

Four wells are currently located at the WestWorld site. One recovery well, located near the parking areas east of Monterra, is permitted for municipal water use; the depth of this well is approximately 1,200 feet. Groundwater that occurs beneath the project area is used for municipal water supply; no groundwater contamination has been recorded at or near the WestWorld site (ADWR 1999).

In addition, there are three existing recharge wells located in proximity to the recovery well. These wells recharge water from the CAP canal into the vadose zone between 150 and 200 feet bls.

Surface Water and Floodplains

The WestWorld property is located within the Paradise Valley Flood Detention Basin north of Reach 11, Dike 4 of the CAP canal. Dike 4 extends from Pima Road on the north (just north of Frank Lloyd Wright Boulevard) to Shea Boulevard on the south. The primary purpose of this basin is to provide flood protection to the CAP canal and the cities of Phoenix, Paradise Valley, and Scottsdale. The detention basin temporarily stores floodflows so that they can be gradually released into the CAP canal. The detention basin receives stormwater flows from the north and east through ephemeral washes in the alluvial fans of very rocky and steep-sloped terrain. Floodflows into the detention basin are estimated at 15,700 cubic feet per second (cfs) with a volume of 2,320 acre-feet during a 100-year flood (U.S. Department of Interior, July 1990).

To protect the capacity of the detention basin, integrity of the dike and CAP canal, and drainage flows through the detention basin system, strict earthwork guidelines exist for any development in the basin (Bureau of Reclamation Guidelines for Road Crossings and Development Within

Dike Drainage Basins, February 1999). These guidelines are intended to assist governmental agencies and private developers in preparing project concepts and designs that do not adversely impact the CAP canal, dikes, and dike detention and drainage basins, and are consistent with current land uses and plans for future land uses.

A majority of the WestWorld project area is located within the 100-year floodplain. The areas not within the 100-year floodplain generally include those areas with permanent buildings, such as the barns, operations building (just east of the barns), the Equidome, A-frame building, Monterra, administrative offices, and Brett's Barn. The boundaries of the 100-year floodplain are shown on Figure 3-1. The Mare Motel, a covered area of gated pens, arenas, parking areas, the polo fields, and vacant areas, generally make up the area within the 100-year floodplain. Portions of the State Trust Land (Parcel A) to the north, which is currently used for overflow parking during events, is also within the 100-year floodplain.

Local regulations require a Floodplain Use Permit be obtained through the Flood Control District of Maricopa County (FCDMC) before construction begins within the 100-year floodplain. As part of the application process, the FCDMC conducts a detailed review of the hydrologic conditions that affect the subject property, and requires that any proposed improvements conform with the County's Floodplain Regulations.

Stormwater and Mosquito Habitat

Generally, storm flows at WestWorld drain into an open 10-year storm channel along the northern boundary of the site. Water entering the storm channel flows from west to east toward a large drainage wash that travels under the Thompson Peak Parkway Bridge. In the drainage wash, just north of its crossing under the Thompson Peak Parkway Bridge, some low areas appear to collect and hold water, rather than draining farther south. Some on-site flows also drain into engineered retention ponds at the western end of the site (near the polo fields). During and after storm events, this runoff temporarily causes standing water, which results in a potential to encourage mosquitoes and mosquito breeding. WestWorld staff currently controls potential mosquito infestation by applying larvacide into standing water areas within 24 to 48 hours of a storm event, consistent with the requirements of Maricopa County Environmental Services Department (MCESD).

3.2.2 Environmental Consequences

Regardless of the alternative selected, Reclamation intends to investigate the ponding of water within low areas just north of the Thompson Peak Parkway Bridge, which presently occurs after storm events. Reclamation will determine what, if any, remedial action(s) should be taken to rectify the drainage problems in this area. Reclamation will then work with Scottsdale to ensure these remedial actions are implemented.

No-Action Alternative

In the No-Action Alternative, the WestWorld Master Plan Update would not be implemented. There would be no additional material placed within the detention basin, and the existing

engineered retention ponds would not be altered. WestWorld staff would continue to implement vector control measures consistent with MCESD requirements for the control of mosquitoes.

Proposed-Action Alternative

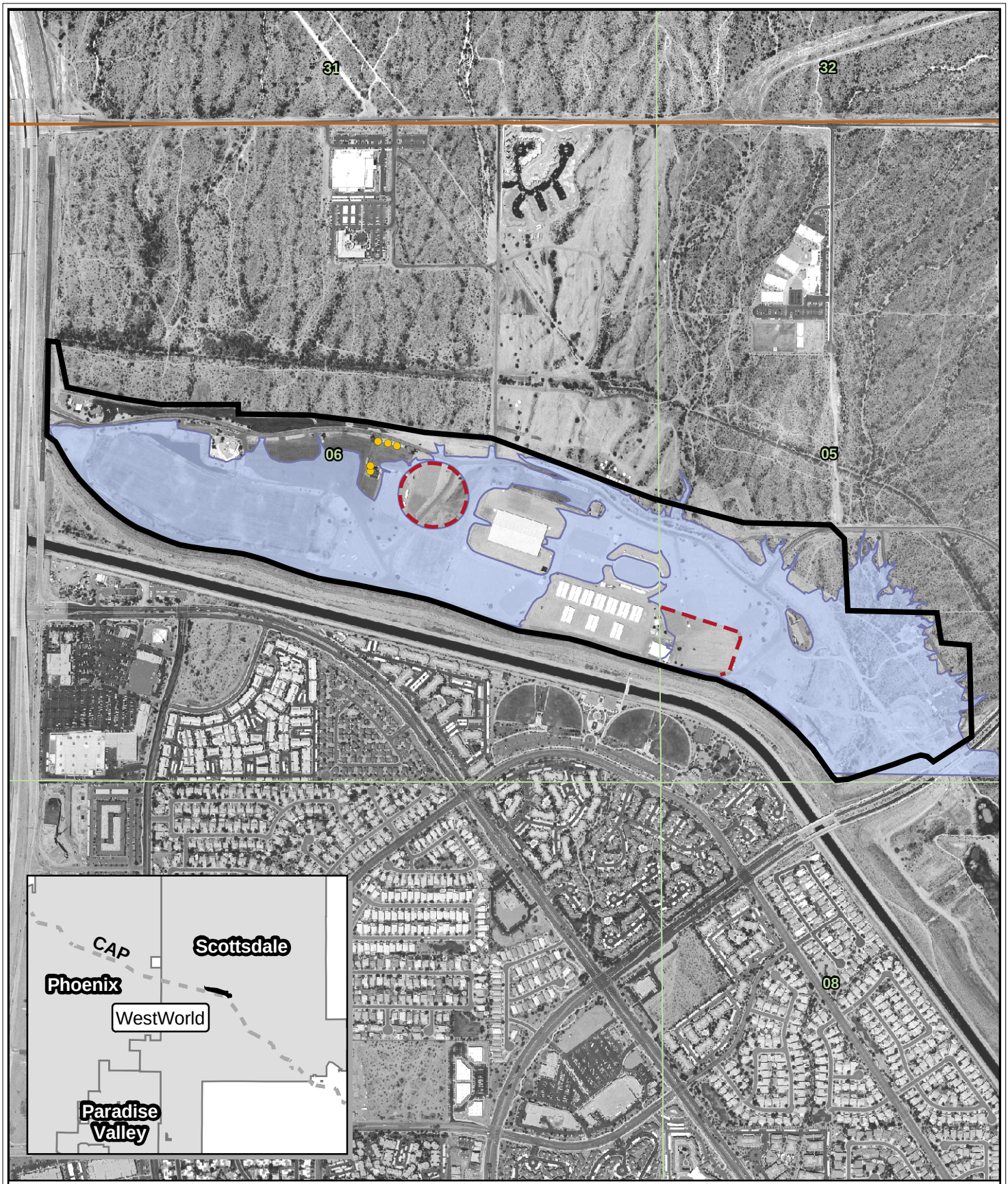
Earth Resources

The Proposed Action would involve the development of new facilities on the site, as well as the rearrangement of some existing facilities, e.g., arenas and parking areas. Soil disturbance would include grading, compaction, and excavation. The majority of the project area has been previously developed and/or disturbed. However, some natural conditions and vegetation still occur on the 5-acre parcel that was recently purchased and the State Trust Land north of the WestWorld property boundary that would be acquired under this alternative. In the Proposed Action, material excavated from State Trust Land Parcel A and the 5-acre parcel would be used as fill material for permanent facilities that would be constructed; these disturbed areas would later be graded for use as a parking area. State Trust Land Parcel B, which has the largest concentration of natural vegetation within the project area, would be graded for construction of a horse boarding facility. Most of the remaining project area already has been disturbed. New parking areas to the north would be surfaced with a consolidated material in accordance with Reclamation's *Guidelines for Road Crossings and Development Within Dike Drainage Basins, February 1999*. These guidelines state, "Excavated areas must be rehabilitated to prevent erosion and to blend with the surrounding environment." Additionally, the northern portion of the acquired State Trust Land Parcel A may be converted to turf, which could be used for parking and as multi-use fields; this would limit potential future erosion.

Groundwater and Subsidence

Best Management Practices (BMPs) and Scottsdale ordinances for horse and pet care require proper cleanup and disposal of horse manure at commercial facilities. Consistent with those requirements, manure would be covered and regularly hauled away (i.e., daily during special events) to prevent manure runoff from entering the engineered retention ponds. Therefore, the Proposed Action would not affect groundwater at or around the site.

Subsidence is an issue in north Scottsdale; however, the development and rearrangement of facilities at WestWorld would not increase groundwater withdrawals in north Scottsdale and, therefore, should not impact subsidence. Additionally, Scottsdale monitors subsidence at the WestWorld recovery well site and the recharge facility should aid in mitigating the effects of land subsidence in the area (WestWorld Golf Course Permit Application, May 25, 1999). Proposed parking and facilities would be designed to not interfere with the existing well sites. Therefore, the Proposed Action would not impact the existing wells, subsidence, or the subsidence monitoring program.



WESTWORLD EQUESTRIAN AND SPECIAL EVENT CENTER

Floodplain Map

Township and Range Line

03 Section Line and Number

WestWorld Boundary

Existing 100-Year Floodplain w/Graded Areas

Areas Raised out of Floodplain in Proposed and Modified Action Alternatives

Note: These data are limited to the boundaries of a detailed study that did not extend farther south.

Well

Map Produced: 01/07/2004

0 625 1,250 2,500

Feet

Source:
Kenney Aerial Mapping Inc., 2001
Flood & Sedimentation Studies, Reach 11 Dikes, Hayden/Rhodes Aqueduct, US Bureau of Reclamation, 1990
Conceptual Drainage Report, Rick Engineerin Company, 1995

URS

Figure 3-1

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Surface Water and Floodplain

The earthwork guidelines from Reclamation were used in the preliminary design developed during the Master Plan Update. The design of the proposed improvements for the WestWorld site includes using fill material to raise certain areas (multipurpose facility and barn expansion) out of the floodplain. In accordance with the earthwork guidelines that require the detention basin capacity be maintained, the project also includes the excavation of two areas (parking lot and an engineered retention pond) north of the site (currently on State Trust Land Parcel A and the 5-acre parcel) to offset any impact on the detention basin capacity. Boundaries of the 100-year floodplain would be slightly modified as a result of the excavation and fill activities, but the overall capacity of the basin would not be impacted. The excavated area on the acquired State Trust Land would drain, by pipe or conveyance channel, into the channel that runs downstream toward the east, immediately north of the existing WestWorld boundary.

As described above, Scottsdale would implement BMPs to handle manure. These BMPs would prevent the manure from becoming entrained in the floodflows and traveling downstream offsite.

Drainage/Stormwater

The Phase I National Pollutant Discharge Elimination System (NPDES) stormwater permitting rule promulgated by the U.S. Environmental Protection Agency (EPA) requires all operators of construction activity disturbing 5 or more acres of land to apply for a NPDES stormwater permit. The Proposed Action would "disturb" more than a total of 5 acres of land at the site and therefore a NPDES permit would need to be obtained before any construction activities begin.

Additionally, Scottsdale has implemented a Stormwater Quality Program in order to assure that pollutants that are picked up by runoff water from a rainfall do not reach Indian Bend Wash, lakes, and detention basins which are all part of Scottsdale's stormwater system. BMPs and Scottsdale ordinances for horse and pet care require proper cleanup and disposal of horse manure at commercial facilities. WestWorld management staff would continue to incorporate these BMPs into their standard operating procedures.

Modifications to on-site drainage such as grading, piping, and installation of drains would be necessary to accommodate the new and modified facilities. Generally, the stormwater drainage would continue to drain into the 10-year storm channel along the northern boundary of the property. Scottsdale would prepare a master flood detention and drainage plan detailing these modifications. This plan would need to be reviewed and approved by Reclamation prior to initiation of any construction activities on site that could result in changes in the detention basin capacity or long-term storage of water that could saturate the foundation of the dikes.

Through the design of the project, established permitting processes (NPDES), BMPs, and implementation of an approved drainage plan, there would be no impact to surface water resources in the area.

Mosquito Habitat

As stated above, stormwater flows into on-site engineered retention ponds, which causes some standing water. Lowering of polo fields, as described in Chapter 2.0, would not be expected to cause longer periods of inundation in the fields after rainstorms because approximately the same drainage area would generate runoff into the fields, and this water generally infiltrates within 24 hours. The engineered retention pond at the east end of the polo field may be subject to longer periods of inundation, as water draining into the outdoor theater area would need to be conveyed, either by pipe or open channel, to this engineered retention pond. Although not considered typical, this area east of the polo fields has been known to be inundated for periods of up to three months; the additional water added to this pond could extend the period of inundation. This water could become a habitat for mosquitoes. WestWorld staff would continue to monitor the site for standing water after storm events and ensure that larvacide is applied within 24 to 48 hours and would continue to implement vector control measures consistent with MCESD requirements.

Modified-Action Alternative

The Modified Action would produce only negligible differences in impacts compared to the Proposed Action for earth and water resources. Overall, impacts would be similar to those stated above for the Proposed Action. Because the outdoor theater would not be constructed under this alternative, however, the engineered retention pond at the east end of the polo field would not receive additional drainage.

Cumulative Impacts

Future projects and developments in the area would be subject to many of the same requirements for protecting earth and water resources; thus, no adverse cumulative impacts are expected to occur.

3.3 AIR QUALITY

3.3.1 Affected Environment

Climate

The Phoenix area is characterized by an exceptionally dry climate, characteristic of the Sonoran Desert region. Normal rainfall amounts rarely exceed 10 inches per year and average approximately 7 inches per year. Two distinct seasons generally account for the majority of rainfall in the Phoenix area. During the summer months of July, August, and September, moist tropical air moves northward from the Gulf of Mexico, causing moderately heavy afternoon and evening thundershowers. During the cooler season, primarily October to March, additional precipitation occurs as moist air moves easterly across much of the Southwest due to Pacific fronts. Typically, April, May and June are the driest months of the year.

Summer temperatures in the Phoenix area are very high with afternoon maximums regularly exceeding 110 degrees Fahrenheit (°F) and morning lows above 80°F are common. During the winter, temperatures are usually mild with lows ranging from the high 30s to low 50s. Subfreezing temperatures are uncommon, normally occurring less than 10 days per year.

Dominant daytime winds are usually from the west and southwest, as influenced by upper air movement throughout the southwestern United States. Early morning wind flows from the east also are common. Average wind speed is less than 15 miles per hour; stronger winds, usually from the west and southwest, can occur during times of pronounced regional pressure gradients (more common in the spring and fall) and with summer thunderstorms. While even light winds can cause particulate matter (specifically disturbed, unstabilized high-silt soils) to become airborne creating dust and haze, their effect on the air quality typically is localized and temporary in nature.

Ambient Air Quality

Since 1970, the Federal Clean Air Act and subsequent amendments have provided the authority and framework for EPA regulation of emission sources and the establishment of requirements for the monitoring, control, and documentation of activities that will affect ambient concentrations of certain pollutants that may endanger public health or welfare. Under the Clean Air Act, each state or delegated permitting authority has the responsibility to achieve and maintain air quality that meets the National Ambient Air Quality Standards (NAAQS). The EPA has promulgated primary and secondary NAAQS for six criteria pollutants (carbon monoxide, nitrogen dioxide, two size categories of particulate matter, ozone, sulfur dioxide, and lead). The primary standards are concentration levels of pollutants in ambient air, averaged over a specific time interval, designed to protect public health with an adequate margin of safety. The secondary standards are concentration levels judged necessary to protect public welfare and other resources from known or anticipated adverse effects of air pollution.

Although states may promulgate more stringent ambient standards, the State of Arizona and Maricopa County have adopted standards identical to the Federal levels (see Arizona Administrative Code Title 18, Chapter 2, Article 2). Table 3-2 presents the NAAQS for five of the six “criteria” pollutants, including both primary standards (pertaining to human health) and secondary standards (pertaining to human welfare, such as visibility, socioeconomics, and effects on flora and fauna). Lead is not measured, as it generally does not pose a problem due to the removal of lead from gasoline.

TABLE 3-2
NATIONAL AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Period	Primary (mg/m3)	Secondary (mg/m3)
NO_2 (nitrogen dioxide)	Annual	100 (0.05 ppm)	100 (0.05 ppm)
SO_2 (sulfur dioxide)	3-hour	—	1,300
	24-hour	365 (0.14 ppm)	—
	Annual	80 (0.03 ppm)	—

TABLE 3-2
NATIONAL AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Period	Primary (mg/m3)	Secondary (mg/m3)
CO (carbon monoxide)	1-hour	40 mg/m^3 (35 ppm)	—
	8-hour	10 mg/m^3 (9 ppm)	—
O_3 (ozone)	1-hour	240 (0.12 ppm)	240 (0.12 ppm)
	8-hour	160 (0.08 ppm)	160 (0.08 ppm)
$PM_{2.5}$ (particulate matter with aerodynamic diameter < 2.5 microns)	24-hour	65	65
	Annual	15	15
PM_{10} (particulate matter with aerodynamic diameter < 10 microns)	24-hour	150	150
	Annual	50	50

NOTES: ppm = parts per million
μg/m^3= micrograms per meter cubed

All portions of Maricopa County are deemed in attainment with the NAAQS for sulfur dioxide SO_2, nitrogen oxides (NO_x) and lead (Pb).

The WestWorld project area is located within the portion of Maricopa County that has been designated as serious nonattainment for PM_{10}, O_3, and CO. Consequently, certain special local regulatory provisions, intended to contribute to reasonable further progress in reaching attainment status for these pollutants, apply to stationary and fugitive sources of these pollutants. Table 3-3 provides a summary of historic data in metropolitan Phoenix for the number of days exhibiting ambient concentrations above the NAAQS. The general trend has been toward fewer exceedance days. The table also shows available data related to the new NAAQS for 8-hour average ozone and $PM_{2.5}$.

Ozone

The Phoenix metropolitan area has had a significant O_3 problem and is currently classified as "serious" nonattainment. Since its classification, there has been a noticeable decline in both peak values and the number of days that approach or exceed an air quality index of 100. The number of days that approached the health standard has been the lowest in recent years, although two days in 2002 were just slightly below the standard. Recently, additional standards have been promulgated for 8-hour average O_3 concentrations. The EPA will propose designations of nonattainment areas for the new 8-hour O_3 standard, based on recommendations provided by the individual states, during 2004.

Carbon Monoxide

The Phoenix metropolitan area is currently classified as "serious" for CO. In recent years, the level of CO has been greatly reduced, and for several years there has not been an exceedance of the NAAQS.

TABLE 3-3
METROPOLITAN PHOENIX AMBIENT AIR POLLUTION DATA
Number of Days Over the Health Standard, Air Quality Index > 100

Year	Carbon Monoxide	Ozone		Particulate Matter		Total	Highest Air Quality Index
	8-Hour	8-Hour	1-Hour	$PM_{2.5}$	PM_{10}		
1990	4	15	6	no data	0	19	154
1991	2	8	0	no data	0	10	132
1992	3	18	8	no data	2	23	174
1993	0	24	3	no data	0	24	132
1994	2	7	2	no data	0	9	129
1995	3	19	5	no data	2	24	149
1996	2	18	1	no data	0	20	154
1997	0	16	0	no data	12	28	370
1998	0	35	0	no data	4	39	270
1999	1	21	1	1	7	30	151
2000	0	21	0	0	7	28	173
2001	0	12	0	4	6	22	164
2002	0	14	0	5	2	21	160

SOURCE: http://www.weathersmith.com/index.html?WsAqForecasts.htm, 2003

Fine Particulate Matter

The Phoenix metropolitan area is currently classified as "serious" for PM_{10}. To address this issue, Maricopa County has established regulations with strict requirements for the identification of affected parcels plus "best available" control measures (BACM) to control significant sources of PM_{10}. Recently, additional standards have been promulgated for $PM_{2.5}$. For the new $PM_{2.5}$ standard, regulatory agencies have initiated a three-year period during which air-monitoring data will be acquired to determine present ambient levels of $PM_{2.5}$. Designation of areas as attainment or nonattainment of the $PM_{2.5}$ standard is scheduled for 2005.

Rule 310 – Fugitive Dust Requirements

Rules 310 and 310.01 of the Maricopa County Air Quality Rules include work practice standards to ensure emissions from fugitive dust sources, such as open areas, vacant lots, unpaved parking lots, and unpaved roadways, are minimized to the extent practicable. An earth-moving permit and dust control plan are required for any operations that disturb a total surface area equal to or greater than 0.10 acre. Currently, Scottsdale has an earth-moving permit from the MCESD that covers all routine earth-moving activities at WestWorld. Dust control plans are required prior to conducting any activities that disturb a larger surface area, such as using unpaved parking lots during an event.

Rule 320 – Odors and Gaseous Air Contaminants

Rule 320 was revised and reissued by the MCESD in July 2003 to establish limits for emissions of gaseous air contaminants into the atmosphere, which may result in odors. Odors are generally defined as smells, aromas, or stenches commonly recognized as offensive, obnoxious, or objectionable to a substantial part of the community.

This rule requires that suitable work practices be in place for pollutant-containing materials including but not limited to paints, pesticides, fertilizer, and manure. Suitable work practices should result in the storing, processing, using, and transporting of pollutant-containing materials in such a manner that gaseous air contaminant emissions and odor are minimized.

At WestWorld, Scottsdale complies with this rule by hauling manure off site as soon as possible, usually within 48 hours after any event, and by attempting to never allow more than 200 cubic yards of manure to stockpile for more than one day. The manure is stored in a "containment area" consisting of a concrete floor and cinder block/concrete walls, and is transported in covered trucks regularly.

WestWorld received complaints in the past about odors. This was due to manure being stockpiled for over a month because the manure contractor was unable to find a dumpsite. As a result of this situation, Scottsdale now requires that the contractor provide proof that a dumpsite is secured for a minimum of 12 months as part of the manure removal contract; Scottsdale also requires that the contractor be capable of hauling 1,000 tons of manure per day, if necessary.

3.3.2 Environmental Consequences

No-Action Alternative

The No-Action Alternative of maintaining existing conditions at WestWorld without construction activities would have a minimal impact on the current air quality of the area. Arenas are furnished with water for dust control, but ambient dust from unsurfaced parking areas on State Land (Parcel A) would occur during events at the site. Dust-causing activities at the site are subject to Maricopa County dust control regulations and will continue to be controlled accordingly.

WestWorld would continue to address potential odors by hauling manure off site as soon as possible and following already established BMPs (described in Section 3.2) and by complying with Rule 320.

Proposed-Action Alternative

The Proposed Action of building several new structures on the WestWorld site and thus the phased, temporary disturbance of a total of 270 acres would have a transient impact on local air quality. Impacts to air quality concentrations of CO, NO_2, SO_2, and O_3 are not anticipated.

Dust Emissions

Construction operations that include land clearing, ground excavation, earth moving, and the actual facility construction are all sources of dust emissions. Potential impacts from these operations would vary from day to day, depending on the level of activity and prevailing meteorological conditions. An overall characterization of emissions from projects that could disturb areas of differing size was performed. The relationship used for this analysis (based on U.S. EPA Document AP-42 Section 13.2.3) is based on the premise that the quantity of dust

emissions is proportional to the area of land being worked and to the level of activity. To reflect the proposed phasing of the project, uncontrolled dust emission rates were estimated for small-, medium-, and large-scale projects in increments of 5, 20, and 50 acres, respectively. To illustrate, within Phase I the new restroom facility and infrastructure improvements would be considered "small" projects with estimated maximum uncontrolled particulate emissions of 6 tons/month during construction; the expansion of the exhibition facility and arena covers, or development of the 15-acre multi-use fields, would be characterized as "medium" projects, with estimated uncontrolled particulate emissions during construction of 24 tons/month; and the relocation of the arenas (assuming grading is necessary) and main road realignment would be considered "large" projects with estimated uncontrolled particulate emissions during construction of 60 tons/month.

In practice, these emissions must be substantially controlled to comply with the requirements of MCESD Rule 310. Essentially all dust generating activities would be subject to dust suppression measures. Such measures may include wind barriers, watering, dust palliatives, limits on vehicle traffic, and other measures described in an approved dust control plan. Collectively, the particulate emission rates listed above would be reduced by 75 to 80 percent using such controls.

The implementation of controls as required by MCESD regulations likely would result in actual PM_{10} emissions that would collectively represent a negligible impact on ambient air quality. However, detailed construction schedules and disturbance areas are not yet known. Therefore, Reclamation and Scottsdale will reevaluate the dust-generating construction activities prior to initiating the construction of the specific facilities/improvements to determine if there is potential for emissions to equal 100 tons/year. If the projected particulate emissions from implementation of the Proposed Action equals or exceeds 100 tons/year, a State Implementation Plan (SIP) Conformity Analysis would be necessary, assuming the area remains classified as a nonattainment area for PM_{10}.

Odors and Gaseous Contaminants

Impacts from odors due to construction operations and facility operations would be possible. The addition of the horse-boarding facility and the potential for additional equestrian events may cause additional horse-related odors. Odors would be controlled in accordance with MCESD Rule 320. BMPs are in place to control odors from manure (e.g., daily removal during special events). These practices would continue.

Modified-Action Alternative

The Modified Action would include the projects of the Proposed Action except three structures: polo barns, boarding facility, and outdoor theater. Each are all medium projects as defined for purposes of estimating their pollutant emissions, and designated for Phase III implementation. The PM_{10} emissions expected to occur under this alternative would be consistent with those of the Proposed Action minus the potential uncontrolled emissions of 72 tons/month attributed to the above-mentioned projects. These emission rates are a conservative estimate of the actual PM_{10} emissions expected to occur at the site and after consideration of active controls would collectively represent a negligible impact on ambient air quality.

During construction of the Modified Action, WestWorld would be required to meet the requirements of MCESD Rule 310 to employ dust suppression measures as described under the Proposed Action. If the projected particulate emissions from implementation of the Modified Action equals or exceeds 100 tons/year, a SIP Conformity Analysis would be necessary, assuming the area remains classified as a nonattainment area for PM_{10}.

Odors and Gaseous Contaminants

Impacts from odors due to construction operations and facility operations would be possible. Odors would be controlled in accordance with MCESD Rule 320. BMPs are in place to control odors from manure. These practices would continue.

Cumulative Impacts

Cumulative short-term and temporary impacts to air quality could occur from the combination of construction activities on the WestWorld site and the existing and proposed developments in the surrounding areas. Ongoing construction projects in the area surrounding WestWorld would be subject to similar dust control measures as WestWorld projects.

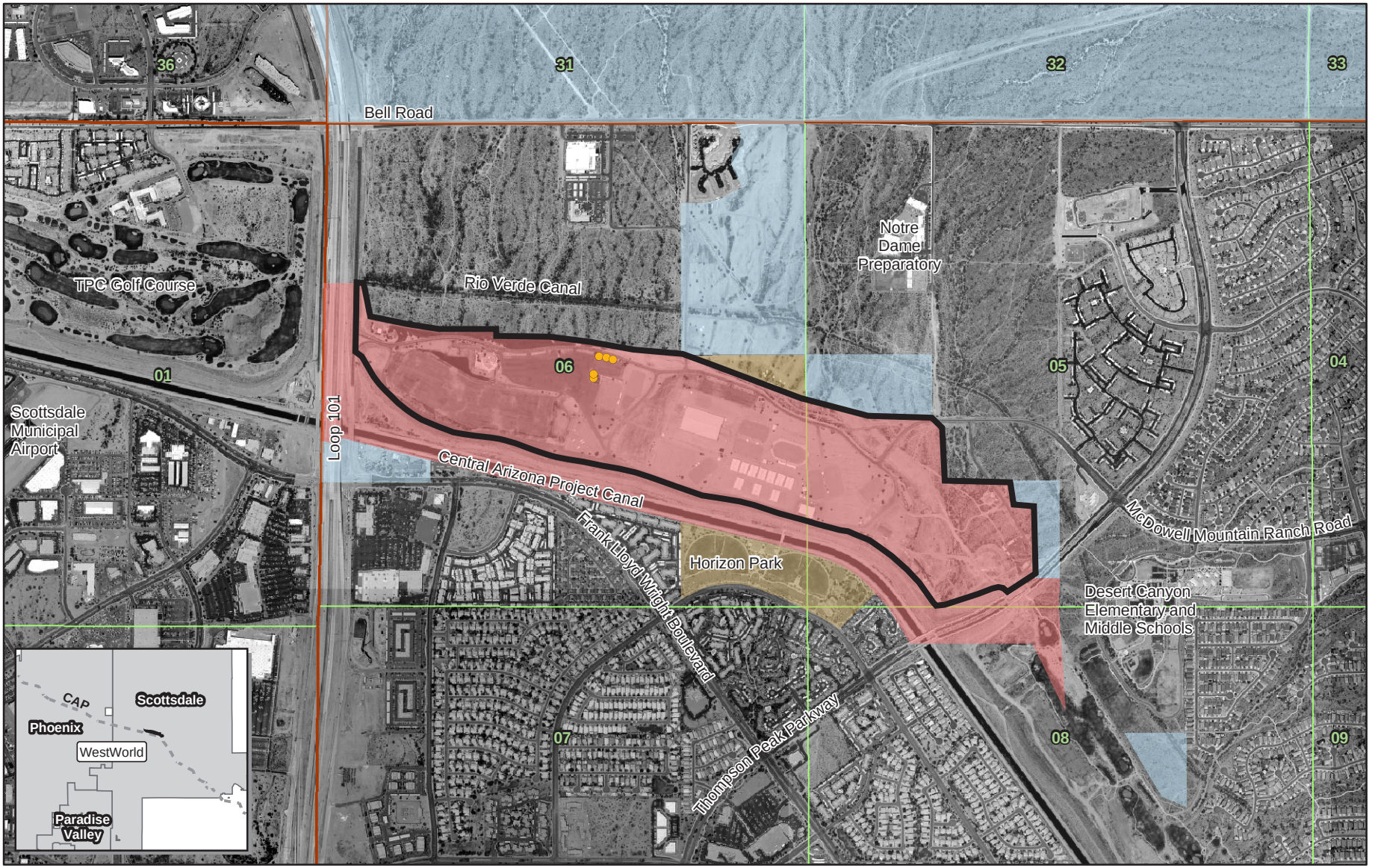
3.4 LAND USE

3.4.1 Affected Environment

Land uses at WestWorld include polo fields, a restaurant/catering facility, roads, parking areas, dirt arenas, barns, and various types of supporting infrastructure. In addition to on-site uses, the land uses of surrounding areas (within approximately 1 mile) have been characterized based on a review of the Scottsdale General Plan, zoning maps and ordinance, Planning Commission Report for WestWorld Master Development Plan Update, interpretation of aerial photography, street atlases, and field visits. Surrounding uses were the focus of public concern because of the potential for impacts from equestrian uses or special events, including the increased dust, light, traffic, and noise on residential areas near WestWorld.

Under Scottsdale's zoning ordinance, WestWorld is zoned as a western theme park district (Ordinance 455, Section 5.2804, included in Appendix A). This district provides for a variety of uses that include recreation, entertainment, and general commercial uses. The district also is intended to provide for open space areas so that uses within the district are adequately buffered from residential areas.

A majority of the land east, west, and south of WestWorld is privately owned and developed with residential, commercial, recreational, and industrial uses. The area immediately north of the existing WestWorld boundaries includes both Scottsdale owned and State Trust Land (Figure 3-2). As discussed in Chapter 2.0 and shown on Figure 2-2, one 5-acre parcel of land and all or part of two parcels of State Trust Land (Parcel A, 51 acres and Parcel B, 17 acres, totaling



WESTWORLD EQUESTRIAN AND SPECIAL EVENT CENTER

Land Ownership

Source:
Kenney Aerial Mapping Inc., 2001
Arizona State Land Department, 2002
Bureau of Reclamation, 2003

Township and Range Line
Section Line and Number
WestWorld Boundary
Bureau of Reclamation
State Trust
Private
City of Scottsdale
Well

0 500 1,000 2,000
Feet

URS

Map Produced: 1/22/2004

Figure 3-2

P:\City_of_Scottsdale\WestWorld_Master_Plan_EAG\Smxds\Figure_3-2.mxd

68 acres) would become part of WestWorld under the action alternatives. The 5-acre parcel and State Trust Land Parcel A are partially disturbed and are crossed by four high-voltage transmission lines and a buried gas pipeline; the transmission lines and natural gas pipeline also cross through WestWorld.

To the immediate south, WestWorld is bounded by the CAP canal, which includes approximately 20 to 40 feet of right-of-way along each side of the canal channel. A levee, with a maintenance road, occupies the area immediately north of the canal. Primary land uses south of the CAP canal include residences, developed open space (i.e., ballfields), and mixed uses with commercial and industrial areas. Commercial uses are concentrated along major arterials and include the developments of Sonoran Village and Scottsdale Towne Center. Developed open space includes Horizon Park. With the exception of Horizon Park, which is owned and operated by Scottsdale, the lands south of the canal are privately owned.

Toward the east (including northeast and southeast), land uses near WestWorld include commercial uses, developed open space, single-family and multifamily residential areas, schools, and vacant land. Horseman's Park East residential subdivision and the McDowell Mountain Ranch master planned community comprise the majority of residential land uses to the east. There are two schools, Desert Canyon Elementary and Middle schools, and a library within the residential neighborhoods. Developed open spaces toward the east include the Sanctuary Golf Course (also located within Reach 11) and McDowell Mountain Ranch Park. Areas of vacant land to the northeast, which are primarily parcels of State Trust Land, are zoned for future residential and commercial development. To the west and southwest, WestWorld is bounded by the State Route 101 Loop and Pima Road, which provides one of the primary access points into WestWorld. Farther west, land uses include the Tournament Player's Club Golf Course (also located within Reach 11), Scottsdale Airpark Municipal Airport, and large commercial uses along Frank Lloyd Wright Boulevard. Lands to the west are zoned primarily for commercial and industrial uses, but with some residential use.

To the north, nearby land uses include office/warehouse development and mainly undeveloped areas of private land. Immediately north of WestWorld new office uses have been developed, with approximately 35-foot-tall buildings backing up to the WestWorld boundary west of North 94th Street. This development is occurring in an area zoned for various commercial, office, and industrial uses. The Rio Verde Canal, a historic canal described in Section 3.10, Cultural Resources, also is located north of WestWorld, though the canal has been modified by the ongoing development for the previously described office uses. Notre Dame Preparatory High School (Notre Dame Preparatory), with its three lighted ballfields, is located north of WestWorld along North 96th Street. Uses slightly farther north of WestWorld and generally fronting Bell Road include an ice skating rink, small commercial uses, and multi-family residential uses. A fire station is located at the intersection of Bell Road and Thompson Peak Parkway. In addition, four high-voltage power lines traverse WestWorld from the center of its northern boundary to its southeastern edge (where the transmission lines then parallel the canal for a short distance to the southeast). The natural gas pipeline enters the WestWorld site at the southeast end of the site, near the CAP canal. The pipeline parallels the canal, then turns north through the site, before meeting the transmission lines and following along those lines farther north.

Both parcels of State Trust Land north of WestWorld are vacant (except for the transmission lines) and this land is zoned primarily as Western theme park, consistent with WestWorld's zoning; a small proportion of the State Trust Land is zoned for commercial uses. Areas adjacent to State Trust Land Parcels A and B are zoned for residential uses to the north and east, and commercial and office uses to the west. WestWorld currently uses approximately 62 acres of State Trust Land north of the existing WestWorld boundaries for overflow event parking under a special land use permit from the ASLD. The 5-acre parcel located under the transmission line is zoned for residential use.

3.4.2 Environmental Consequences

Impacts on land uses are characterized by considering whether construction and operation of the project would conflict with Federal, State, or local land use plans and zoning for the site and surrounding area.

No-Action Alternative

Under the No-Action Alternative, WestWorld would continue to function as a flood detention basin and a western-themed equestrian and special event facility. On-site land uses would include those that currently occur, such as organized equestrian events, car shows, dog shows, and casual/recreational use of the polo fields and arenas by individuals or groups. Land uses at WestWorld would be consistent with the current Scottsdale General Plan and zoning for the site. Nearby land uses (existing or planned) or land ownership would not be expected to change as a result of the No-Action Alternative.

Proposed-Action Alternative

Under the Proposed Action, WestWorld would continue to function as a flood detention basin and a western-themed equestrian and special event facility. On-site facilities would be developed to provide for additional recreational and special event uses in the summer months, similar to those that presently occur in the cooler months. The proposed facilities and activities would not change the overall flood detention capacity of the site, consistent with guidelines established by Reclamation for development within Reach 11. The proposed facilities are permitted under the Western theme park district zoning, so long as the activities occurring at the facilities are consistent with the use regulations of the zoning ordinance (refer to Appendix A).

The ongoing and anticipated activities that would occur in the proposed facilities, including the outdoor theater for live entertainment, are consistent with the established use regulations. Land ownership patterns would change, as approximately 68 acres of State Trust Land would be purchased for inclusion in WestWorld. The 5-acre parcel and State Trust Land Parcel A (51 acres), which are relatively undeveloped parcels (except for the transmission lines and gas pipeline, which would maintain easements), would be developed for event parking and possibly multi-use fields at the northern end. The State Trust Land Parcel B (17 acres), which is only partially disturbed, would become the proposed horse boarding facility and would be operated by a concessionaire. The final design and placement of facilities would account for the transmission lines, gas pipeline, and their associated easements to ensure that conflicts with proposed facilities

and their operations would not occur. Both State Trust Land parcels are zoned primarily for Western theme park (a small portion is zoned commercial); the inclusion of these properties and expansion of WestWorld's uses into these areas would be consistent with the presently adopted plan and zoning for the area. The 5-acre parcel would require rezoning by Scottsdale from residential to Western theme park. Existing and planned land uses in areas outside the proposed WestWorld boundary would not change as a result of the Proposed Action because implementation of the Proposed Action would not change the land uses or zoning in off-site areas. If developed, the multi-use fields (turf area) at the north end of the acquired State Trust Land Parcel A would be located near or adjacent to off-site uses including residential areas to the north and east, and office/commercial areas to the west. As no lights are proposed for these fields, and the zoning ordinance restricts the times and levels of noise allowed, no conflicts with the existing or planned adjacent uses would occur.

Modified-Action Alternative

Under the Modified Action, WestWorld would continue to function as a flood detention basin and a western-themed equestrian and special event facility. On-site facilities would be developed to provide for additional recreational and special event uses in the summer months, similar to those that presently occur in the cooler months. Unlike the Proposed Action, the outdoor theater, polo barns, and horse boarding facility would not be developed. Impacts of the Modified Action on land uses would be slightly reduced compared to the Proposed Action because State Trust Land Parcel B (17 acres) would not be necessary for the Modified Action. Therefore, slightly less land would change ownership and use from its present condition, but this land would continue to be zoned Western Theme Park.

Cumulative Impacts

Cumulative impacts would include changes to land uses on surrounding privately owned lands, which would become developed with office, commercial, and residential uses. A small portion of State Trust Land north of Parcels A and B likely would be sold for additional private development. These changes to land uses would be consistent with the Scottsdale General Plan and zoning for the area.

3.5 AESTHETIC/SCENIC RESOURCES

3.5.1 Affected Environment

WestWorld is located primarily in the flood detention basin of Reach 11, Dike 4 of the CAP canal. In addition to being located along the CAP canal, foreground features near the site (within 0.5 mile) include Pima Road and Loop 101 to the west; recently developed office/warehouse uses to the north; Notre Dame Preparatory and residential development to the northeast; and Thompson Peak Parkway, Desert Canyon Middle and Elementary schools, and the Sanctuary Golf Course to the southeast. Foreground views to the south are primarily blocked by the presence of the levee protecting the CAP canal. The McDowell Mountains provide a dominating background visual feature several miles east of the site.

Landscape Character and Scenic Quality

Landscapes and their scenic quality vary according to the diversity of landforms, vegetation, and cultural or man-made features present. In general, landscapes with greater diversity of features are considered to be of higher scenic quality. The project area has been highly modified by previous human activities and development. The WestWorld site itself does not include any natural landscapes.

Within the WestWorld site, visual features include grass fields, paved and unpaved parking areas, dirt arenas, various structural facilities (e.g., barns and the Equidome), and supporting infrastructure (e.g., roads and lights). In addition, a transmission line corridor traverses the site. Within the corridor, there are four 230kV transmission lines supported on lattice towers and a 69kV transmission line on single-pole structures that cross the eastern portion of the site from northwest to southeast.

Areas surrounding WestWorld include both natural and developed landscapes. Adjacent areas to the north include some remnant native desert vegetation on relatively flat but previously disturbed areas used for parking. The diversity of the landforms and vegetation within these areas are limited. Other nearby areas are developed predominantly with various office/warehouse, commercial, residential, and transportation uses. To the north of WestWorld, recently constructed approximately 35-foot-tall office/warehouse buildings are located close to the WestWorld boundary. Toward the northeast, the most apparent visual feature is lighting for fields, approximately 60 to 80 feet high, at Notre Dame Preparatory. Areas more distant toward the east and north include undeveloped mountain views in the background; the distance of these mountains from the site make distinct landform and vegetation diversity difficult to distinguish. Views to the south are limited by the levee, which is approximately 30 feet high that protects the CAP canal from floodwaters. Despite the presence of the levee, views to the south can include the lights from four ball fields in Horizon Park on North 100th Street. Depending on viewing location (i.e., farther from the levee), distant views to the south also can include Camelback Mountain. Views toward the west are limited due to the presence of the Loop 101 just west of the site, which is somewhat elevated compared to most of the WestWorld site. Lighting poles are present on the freeway and visible from WestWorld.

Sensitive Viewers

Sensitive viewers include residential viewers adjacent to the site and viewers from transportation routes adjacent to the WestWorld site. Sensitivity is based on viewing duration and distance. Because residential viewers would observe WestWorld for a longer duration than motorists on a transportation route, residential viewers are considered more sensitive to changes.

Residential views toward the WestWorld area occur from the south of the CAP canal and from the northeast. Residences immediately south of the CAP canal along WestWorld's boundary generally include multifamily complexes where buildings are two or three stories tall where views of WestWorld features may occur. However, these residences have limited views into WestWorld due to the presence of the levee. North of the CAP canal and east of WestWorld, there is a residential area located north of the Rio Verde Canal; these are primarily single-family

residences. According to the Scottsdale General Plan, there does not appear to be additional residential areas planned adjacent to WestWorld beyond those existing in areas northeast and south of the site (City of Scottsdale 2002b). However, the present zoning for the area would allow for additional residential development north of WestWorld between North 95th and 96th streets (near Notre Dame Preparatory) and on the 5-acre parcel crossed by the power lines.

Transportation routes with views of WestWorld include Pima Road, Loop 101, Thompson Peak Parkway, North 94th Street, and North 96th Street and McDowell Mountain Ranch Road. These views are primarily limited to visibility from the roadway adjacent to the site. The duration of views from transportation routes is extremely short, making these viewers less sensitive than on-site and residential viewers.

3.5.2 Environmental Consequences

Impacts on aesthetics/scenic resources are characterized by considering whether the project's construction and operation would conflict with Federal, State, or local laws, regulations, and policies for the site and surrounding area, or if the project would disrupt views of scenic areas by sensitive viewers.

No-Action Alternative

Under the No-Action Alternative, no new facilities would be added, and continued operation and maintenance of the existing facilities would occur. Scenic resources would not be affected, nor would any views of scenic resources by sensitive viewers be obstructed by continued operations and events. Lighting at WestWorld would continue to be partially visible from off-site areas during evening events, particularly those utilizing the arenas (where brighter lighting is required compared to parking areas). Minimal light spillage into off-site areas would occur.

Proposed-Action Alternative

The Proposed Action would have minor impacts on aesthetics/scenic resources and sensitive residential viewers. Short-term adverse impacts on scenic resources would result from dust-generating construction activities such as excavation, filling, and grading, which could temporarily disrupt views.

The addition of numerous facilities and structures resulting from the Proposed Action would change the overall appearance of WestWorld when viewed from nearby residential and transportation views. The horse boarding facility would be visible from residential areas adjacent to the northeast and would potentially lead to blockage of views toward the southeast. However, views from residential areas tend to be focused east toward the McDowell Mountains and views toward the southeast already include various man-made features (e.g., CAP canal levee, Loop 101). Most of the proposed facilities would be within the interior areas of WestWorld, screened from off-site sensitive viewers, and too distant from sensitive viewers to interrupt views of scenic areas. In addition, WestWorld facilities would be designed and constructed to complement the natural surroundings with a western theme, and the Scottsdale DRB would approve all building materials and colors. These mitigation measures would minimize adverse visual impacts

on existing views toward WestWorld. Therefore, the impact on sensitive viewers to the north and east would be minor.

Mountain views from residential areas south of the CAP canal would not be obstructed by new facilities at WestWorld, as the levee already blocks views from lower-level residences. Viewers from upper-level residences would likely view over WestWorld features toward the McDowell Mountains. Residences south of the CAP canal would observe additional lighting more frequently during summer events compared to the No-Action Alternative; however, light spillage into off-site areas would be reduced compared to the No-Action Alternative due to the covering/enclosing of walkways and arenas. Lighting at WestWorld may not be substantially noticeable in the off-site areas, as there are already numerous lighted fields north, south, and southeast of WestWorld associated with parks and schools. Lighting for nighttime use of the multi-use fields, should they be developed, has not been proposed; therefore, minimal light spillage would occur to residential areas to the immediate north and east. Viewers traveling on nearby roadways would notice aesthetic changes within WestWorld, but the proposed facilities would not obstruct views east toward the McDowell Mountains because none of the proposed facilities would be taller than the Equidome, which is 38 feet tall.

Modified-Action Alternative

Impacts of the Modified Action on aesthetics/scenic resources would be slightly reduced compared to the Proposed Action because the polo barns, outdoor theater, and horse boarding facility would not be developed under this alternative. The 17-acre State Trust Land Parcel B would likely remain undeveloped, allowing for partial screening of views into WestWorld from residential areas to the northeast by the existing native vegetation. The impacts on views from residential areas south of the CAP canal and nearby roadways would be similar to those described under the Proposed Action.

Cumulative Impacts

Cumulative impacts are not expected under any alternative. However, development of new residences in the area would allow for increased views of WestWorld facilities. In addition, increased development in the area would result in some screening of views to and from WestWorld. Neither future developments, nor WestWorld's proposed facilities (under the Proposed or Modified Actions) and operations, would result in substantial blocking of views toward the McDowell Mountains.

3.6 RECREATIONAL RESOURCES

3.6.1 Affected Environment

Existing recreation at WestWorld includes primarily equestrian uses associated with the existing arenas, trails that connect to off-site areas, and polo fields. Despite the emphasis on equestrian uses, WestWorld hosts a variety of special events for public recreation, ranging from dog shows to car auctions. In addition, when not used for a special event, some of the WestWorld facilities,

such as the polo fields, are open to the public for a variety of potential recreational uses including walking, soccer, and frisbee, among other uses.

Existing nearby recreational opportunities that serve larger areas than the immediate neighborhood include the Tournament Player's Club Golf Course to the west, Sanctuary Golf Course and McDowell Mountain Ranch Park to the east, and Horizon Park to the south. Horizon Park, immediately south of the CAP, provides lighted ballfields for organized recreation. Additionally, lighted ballfields are located at Desert Canyon Elementary and Middle schools, and at Notre Dame Preparatory (though the schools are not likely available for public use). Farther east, the McDowell Mountains offer extensive open space for hiking, horseback riding, and even mountain biking in certain areas.

In addition, there are several trails planned for the area adjacent to WestWorld, either by developers or Scottsdale. The Verde Canal Trail is planned to follow the Rio Verde Canal from west to east just north of WestWorld. A separate trail is planned to travel from north to south, from the McDowell Mountain Sonoran Preserve through WestWorld, and on to Horizon Park and the Sanctuary Golf Course. Portions of the second trail exist, but it has not been formally developed.

3.6.2 Environmental Consequences

Impacts on recreational resources are characterized by considering whether the project's implementation would affect the quality or number of recreational opportunities available in the project area, or if the project would conflict with local or regional recreational uses of the area.

No-Action Alternative

Under the No-Action Alternative, no new facilities would be added, and continued operation and maintenance of the existing facilities would occur. Existing and planned recreational resources would not be affected by continued operations and events. Special events, and general usage of WestWorld facilities, would continue to be concentrated during eight months of the year, with few recreational uses in the summer months.

Proposed-Action Alternative

The Proposed Action would have some adverse, as well as beneficial, impacts on recreational resources. Short-term adverse impacts on recreational resources would result during construction activities if recreational uses and users are displaced temporarily.

Long-term and beneficial impacts on recreational resources would occur from operation and maintenance of the Proposed Action, as enclosing and covering certain facilities would allow for summer use of WestWorld for various recreational and special events. In addition, the proposed facilities would further diversify the types of events that could be held at WestWorld, allowing for additional recreational uses, including uses of more multi-use fields at the north end of the project area, if they are developed. Additionally, open space would be maintained through the WestWorld site to accommodate the trails through or adjacent to the site.

Modified-Action Alternative

Impacts of the Modified Action on recreational resources would be similar to those of the Proposed Action. The lack of an outdoor theater, polo barns, and horse boarding facility would not be anticipated to substantially diminish the diversity of recreational uses and special events throughout the year. However, the recreational opportunities would be fewer than those available under the Proposed Action.

Cumulative Impacts

Cumulative impacts on recreational resources would be beneficial, as the proposed facilities would provide additional locations and opportunities for recreation in the growing community. Additionally, the anticipated development in the surrounding area would contribute to the increasing demands for recreational facilities. This increased local demand may be met by other planned parks/facilities, including the McDowell Mountain Ranch Park and Aquatic Center. Additionally, Scottsdale encourages landowners/developers with land suitable for future development to dedicate park space where there is an existing neighborhood park shortage or need to preserve open space (Scottsdale General Plan 2002b) to assist with meeting increasing recreational demands.

3.7 SOCIOECONOMICS (INCLUDING ENVIRONMENTAL JUSTICE)

3.7.1 Affected Environment

The socioeconomic inventory discussed in this section includes information related to population, demographics, economics, and fiscal growth as it relates to Scottsdale and to some extent, the surrounding areas. The data found in this section were obtained from Scottsdale's Office of Economic Vitality and the United States Census Bureau.

Population

The State of Arizona is the twenty-third most populous state in the United States with its capital, Phoenix, as the sixth largest city in the United States. Scottsdale is one of the fastest growing communities in the metropolitan Phoenix area according to recent census information. Between 1990 and 2000, Scottsdale's population has grown 61 percent at an annual average rate of 6.1 percent per year, as compared to the Phoenix metropolitan area's population growth of 46 percent in the last 10 years. Between 1975 and 2000, Scottsdale's population grew 169 percent. Overall, the Phoenix metropolitan area grew 135 percent during this same 25-year period.

The estimated population of the Phoenix metropolitan area was approximately 3,192,125 in January 2002. The population of Scottsdale in January 2002 was approximately 209,960 (City of Scottsdale 2002c). According to the data from the U.S. 2000 Census, the population of Census Tract 2168.25, in which WestWorld is located, was 14,658.

Demographics

General demographic data, including race and age, were collected from the U.S. Census Bureau and the City of Scottsdale Demographic Trends Census Update from June 2003. Table 3-4 summarizes the demographic data collected.

Income and Poverty Levels

The U.S. Census Bureau and the U.S. Department of Health and Human Services both record poverty statistics for the country, but they each have their own calculations for the poverty income level. However, the two sets of numbers do not differ dramatically. This report uses data from the U.S. 2000 Census and thus uses data derived by their statistical methods. Poverty guidelines from Health and Human Services and the U.S. Census Bureau are shown in Table 3-5 for informational purposes.

TABLE 3-4
COMPARISON OF DEMOGRAPHIC CHARACTERISTICS FOR ARIZONA, MARICOPA COUNTY, THE CITY OF SCOTTSDALE AND CENSUS TRACT 2168.25 IN 2002

			RACE					
	Median Age (Years)	Total Population	White	Black	Native American	Asian	Pacific Islander	Other
Arizona	34	5,130,632	3,873,611 75%	158,873 3%	255,879 5%	92,236 1.8%	6,733 0.1%	596,774 12%
Maricopa County	33	3,072,149	2,376,359 77%	114,551 4.0%	56,706 2%	66,445 2%	4,406 0.1%	364,213 12%
City of Scottsdale	41	202,705	186,883 92.2%	2,501 1.2%	1,240 0.6%	3,964 2.0%	167 0.1%	4,603 2.3%
Census Tract 2168.25 (includes WestWorld)	37	14,658	13,698 93%	176 1.2%	29 0.2%	417 3.0%	15 0.1%	85 0.6%

SOURCES: U.S. Census Bureau 2000; City of Scottsdale Demographic Trends Census Update 2003

TABLE 3-5
POVERTY GUIDELINES BY FAMILY INCOME FOR THE CONTINENTAL UNITED STATES FOR YEAR 2000

	Size of Family Unit				
	1	**2**	**3**	**4**	**5**
Health and Human Services	$8,350	$11,250	$14,150	$17,050	$19,950
U.S. Census Bureau	$8,794	$11,239	$13,738	$17,603	$20,819

SOURCE: U.S. Census Bureau and U.S. Department of Health and Human Services

Scottsdale has one of the highest median household income figures of any city in Arizona. The median annual household income of Scottsdale residents was $57,484, compared to the metropolitan area average of $45,358. Growth in median household income in Scottsdale between 1990 and 2000 was 47 percent, which was equal to the growth in the Phoenix metropolitan area.

Table 3-6 compares the income and poverty information for the Arizona, Maricopa County, Scottsdale and the Census Tract in which WestWorld is located.

TABLE 3-6
COMPARISON OF INCOME, FAMILY SIZE AND POVERTY LEVEL FOR ARIZONA, MARICOPA COUNTY, THE CITY OF SCOTTSDALE AND CENSUS TRACT 2168.25

	Median Household Income	**Median Family Income**	**Median Family Size**	**Families Below Poverty Level**
Arizona	$40,558	$46,723	3.17	9.9%
Maricopa County	$45,358	$51,827	3.21	8.0%
City of Scottsdale	$57,484	$73,846	3.07	3.4%
Census Tract 2168.25 (includes WestWorld)	$103,254	$110,254	2.79	2.4%

SOURCE: U.S. Census Bureau 2000

NOTE: A household is defined as the total number of people living in one housing unit. A family is defined as the total number of people living in one household and related to the householder.

Scottsdale Employment

Table 3-7 provides a breakdown of Scottsdale's employment by industry for 2000 and projected for 2010. Business services and retail trade are the largest employment categories for 2000 and projected for 2010. Scottsdale is expecting employment to grow by approximately 27,600 jobs, or 21 percent, over the next 10 years. Most industry categories are expected to remain flat over the next 10 years. However, finance, insurance, and real estate employment is expected to decline while business services are projected to expand (City of Scottsdale 2002c).

TABLE 3-7
CITY OF SCOTTSDALE
CURRENT AND PROJECTED EMPLOYMENT BY INDUSTRY

	2000		2010	
	Employment	**Percent**	**Employment**	**Percent**
Agriculture	1,918	1.5	2,225	1.4
Mining	122	0.1	123	0.08
Construction	7,077	5.5	7,938	5.1
Low Tech Manufacturing	2,985	2.3	3,639	2.3
High Tech Manufacturing	8,138	6.3	8,762	5.6
Transport	3,842	3.0	4,038	2.6
Wholesale Trade	6,674	5.2	8,378	5.4
Retail Trade	18,725	14.5	23,507	15.0
Finance, Insurance, Real Estate	16,440	12.8	18,141	11.6
Business Services	26,848	20.9	36,081	23.1
Health Industry	12,785	9.9	14,934	9.6
Hospitality	14,652	11.4	17,900	11.4
Personal Services	8,446	6.6	10,600	6.8
TOTAL	128,652	100.0	156,267	100.0

SOURCE: City of Scottsdale 2002c

Tourism

Scottsdale hosted approximately 8.3 million visitors in 2002, with 1.1 million of the visitors staying at least one night in a hotel. The average Scottsdale leisure visitor is 54.5 years old with a household income of $72,200, and is most likely from the midwestern and western regions of the United States (City of Scottsdale 2002d). The tourism industry is by far the largest economic activity in Scottsdale, generating over $2.4 billion in total economic activity within the community. Tourism is the largest employer in Scottsdale and one of the most significant sources of revenue for Scottsdale's operations. Tourism in Scottsdale is driven by several factors—destination resorts, special events, golf, desert environment, southwestern culture, and weather. Numerous special events take place in the Scottsdale market area throughout the year. The WestWorld property is a draw for tourists and tourist events, thus contributing to the overall economy of Scottsdale.

Scottsdale has a three percent transient (bed) tax, which can be used to help measure tourism activities throughout Scottsdale. The Tourism Commission of Scottsdale supports many events through the use of the bed tax funds. Typically, funded events are those that meet the Commission's desired themes—Western, Golf, Art, Culinary, and Participatory Sports. Approximately 45 percent of the revenue from the tax goes to the Scottsdale Convention and Visitors Bureau and the remainder is administered by Scottsdale for tourism development and research activities (City of Scottsdale 2002d). In 2001, Scottsdale collected $7.27 million dollars in revenue from the bed tax, which amounted to approximately 4 percent of Scottsdale's annual operating revenues ($185.7 million dollars).

In addition to the bed tax, Scottsdale measures tourism activities and trends through the use of sales taxes collected at hotels, which amounted to $5.7 million dollars in 2001 or 3.1 percent of Scottsdale's annual operating revenue.

Taxes

Taxes in Scottsdale are derived from various sources such as sales tax, use taxes, property taxes, as well as more specific areas such as tourism activities (bed tax). Events and activities at the WestWorld property contribute to the tax collections for Scottsdale in the form of sales, use, and taxes associated with tourism.

WestWorld Fiscal Conditions

Scottsdale generates operational revenues from WestWorld four ways; rental rates, labor and equipment fees, food and beverage concessions, and feed and bedding fees. Operational revenues in fiscal year (FY) 2000-2001 totaled $1,015,893 and costs for the same fiscal year totaled $1,779,509 (City of Scottsdale 2003b).

Key existing conditions from the WestWorld Economic Feasibility and Impact Study, March 13, 2003, and the WestWorld Market Research Study, March 13, 2003, are summarized below:

- Total annual revenues generated at WestWorld declined 3.0 percent to $1,015,893 in FY 00-01.
- WestWorld's total annual costs increased an average of 9.1 percent to $1,779,509 in FY 00-01.
- The total number of events in FY 00-01 was 107 (422 event days, 3.9 average days per event). Events on average have decreased; however, event days have increased.
- The number of estimated guests per event has been declining in recent years, from 539,960 in FY 97-98 to 464,552 in FY 00-01.
- The majority of the events occur during the months of March, April, and October. The summer months have very few events.
- The total direct spending contribution by WestWorld attendees was $24,793,101 in FY 00-01. Fiscal contributions from FY 00-01 consisted of sales and bed taxes to Scottsdale's General Fund of $748,752. Indirect contributions to the community were $11,000,000 and revenue to Scottsdale's fund of $332,774.

3.7.2 Environmental Consequences

No-Action Alternative

Under the No-Action Alternative, no improvements would be made to WestWorld facilities, but special events would continue to occur. Based on these continuing activities, the No-Action Alternative is not expected to result in changes to the demographics, income or poverty levels in Arizona, Maricopa County, Scottsdale and/or Census Tract 2168.25.

Future economic conditions, as related to tourism and tax revenues, are expected to be similar to those of the past following general trends outlined in Section 3.7.1.

The No-Action Alternative assumes the present operating conditions of WestWorld would continue, resulting in similar fiscal conditions as observed over the past four fiscal years. However, Scottsdale could renegotiate contracts for the use of WestWorld, as well as contracts for services, in an attempt to minimize future operational losses.

Proposed-Action Alternative

The Proposed Action is not expected to have an adverse effect on demographics, population or general income and poverty levels in Arizona, Maricopa County, Scottsdale or in Census Tract 2168.25. The Proposed Action would have considerable influence on the socioeconomic conditions of the local area through direct and indirect economic gains due to new and increased use of the facilities at WestWorld. The general business community and Scottsdale are most likely to experience the fiscal benefits of the project.

The new facilities associated with the Proposed Action would result in an estimated 60 percent increase in the number of events and an estimated 108 percent increase in visitors. Economic and tax benefits would be expected to occur within Scottsdale and surrounding areas. According to the WestWorld Economic Feasibility and Impact Study (March 13, 2003), after implementation of the Proposed Action WestWorld would continue to show operational losses until the fifth year of implementation of the Proposed Action. Even though WestWorld would continue to operate with financial losses, the facilities and events would have a positive economic effect on the community and the Scottsdale General Fund. The total positive economic effect on the community from spending associated with events is expected to be $54,442,224 in the first year and $70,057,755 by the fifth year. This spending is anticipated to generate tax revenues of $1,125,677 for Scottsdale during the first year and $1,455,998 by the fifth year.

Construction impacts, though short term, also would be beneficial. The Proposed Action would employ approximately 59 construction-related full time equivalent employees annually during the construction phase.

A review of the demographic conditions of the area indicated there are no concentrations of minority or low-income groups in the area of WestWorld that would be disproportionately affected by the Proposed Action.

Modified-Action Alternative

Socioeconomic effects of the Modified Action are expected to be similar to the Proposed Action with two exceptions. Because the outdoor theater would not be built in this alternative, the benefits of the potential theater events (increased visitors, revenue, etc.) would not occur. The WestWorld Economic Feasibility and Impact Study (March 13, 2003), estimates the outdoor theater could host up to 16 commercial events (concerts and performing arts events) during the first year of operation. Other concerts could be hosted in conjunction with other WestWorld events (estimated at 12). Additionally, the horse boarding facility, which would be operated as a

concession under the Proposed-Action Alternative would not be built under this alternative. Any of the revenue associated with this facility would not be realized.

Cumulative Impacts

General beneficial economic effects would occur under the Proposed or Modified Actions. Because of the increased development in the north Scottsdale area, these economic effects likely would be combined with other economic increases in the area.

3.8 TRANSPORTATION AND TRAFFIC

3.8.1 Affected Environment

The WestWorld project area is located in a growing community of north Scottsdale, which includes residential, commercial, industrial, and institutional properties and, therefore, is surrounded by arterial, collector, and local roadways, as well as one state route. Scottsdale classifies the streets and roadways throughout Scottsdale and in the project area in the Streets Master Plan (City of Scottsdale 2003a) according to basic use, design, and functional characteristics. The roadways in the WestWorld project area are described in Table 3-8.

TABLE 3-8
ROADWAY TYPE AND CHARACTERISTICS OF ROADWAYS IN PROJECT AREA

Roadway Type		Characteristic	Name of Roadway in Project Area
Freeway		• carries large numbers of traffic as the freeway cuts through Scottsdale	• State Route 101 Loop
Arterial *Streets designed to carry a significant amount of traffic at reasonably higher speeds.*	Major	• typically planned for six lanes • provide connections to adjacent jurisdictions and routes • designed to facilitate traffic flow and should have as few driveways, median cuts, left turns and signalized intersections as possible • design capacity of 35,000 to 55,000 vehicles per day at 45 to 55 miles per hour (mph)	• Frank Lloyd Wright Boulevard (full six lanes with raised medians) • Thompson Peak Parkway (four lane divided roadway) • Pima Road (three lanes on north and south side of Loop 101)
	Minor	• designed with four lanes • not expected to have as much traffic as the major arterials • design capacity of 25,000 to 35,000 vehicles per day at 35 to 45 mph	• Bell Road (four lane divided roadway)
Collector *Streets that connect neighborhoods to the*	Major	• typically four-lane streets • design capacity of 15,000 to 35,000 at 35 to 45 mph	• McDowell Mountain Ranch Road • North 98th Street

TABLE 3-8
ROADWAY TYPE AND CHARACTERISTICS OF ROADWAYS IN PROJECT AREA

Roadway Type		Characteristic	Name of Roadway in Project Area
larger arterial streets and are vital to overall circulation making up a significant portion of the major street network.	Minor	• two travel lanes and a center turn lane/median • designed for good traffic flow • contain more driveways, left turns and intersections • design capacity of 5,000 to 15,000 vehicles per day at 35 mph	• Bahia Road • North 94th Street • North 91st Street

SOURCE: City of Scottsdale 2003a

The major roadways to the north, south, east, and west of the property are Bell Road, Frank Lloyd Wright Boulevard, Thompson Peak Parkway, and Pima Road, respectively. Loop 101 parallels Pima Road to the west.

Bell Road, running east/west, is located approximately 2,400 feet to the north of the WestWorld property and consists of four total lanes of traffic (near Pima Road) but decreases to two lanes of traffic east of North 94th Street. Traffic signals are located at North 91st Street and North 94th Street. Bell Road does not have an interchange at Loop 101.

Frank Lloyd Wright Boulevard is located approximately 600 feet to the south of the property and is a major east/west arterial comprised of six total lanes of traffic and a landscaped median. Thompson Peak Parkway is located approximately 700 feet east of the property and consists of four total lanes of northbound/southbound traffic with a landscaped median. Loop 101, also known as the Pima Freeway, is approximately 400 feet directly west of the project area and is a major transportation corridor into and away from the north Scottsdale area. The freeway consists of six total lanes of traffic and a large median. Pima Road is located between the WestWorld property and Loop 101 and functions as a frontage road to Loop 101. The portion of Pima Road bordering the WestWorld property to the west consists of three lanes of northbound traffic and carries local traffic as well as serves as an entry point to Loop 101 from Frank Lloyd Wright Boulevard.

The area generally to the north between the WestWorld property and Bell Road is in the process of significant development (mostly commercial and light industrial). Several local streets have been added or improved to accommodate this development, such as Bahia Road, North 90th Street, North 91st Street, and North 98th Street. The CAP canal is located to the south of the WestWorld property and north of Frank Lloyd Wright Boulevard. Use of the maintenance access roads is restricted to Central Arizona Water Conservation District personnel for CAP canal operation and maintenance purposes.

Average daily traffic volumes for select intersections and road segments are studied every two years and reported on the Scottsdale website (City of Scottsdale http://www.ci.scottsdale.az.us/Traffic). Intersections and road segments in the project area that were studied in 2000 and 2002, as well as their reported traffic volumes, are listed in Table 3-9.

TABLE 3-9
AVERAGE DAILY TRAFFIC VOLUMES
WESTWORLD PROJECT AREA

Roadway	Average Daily Traffic Volume 2000	Average Daily Traffic Volume 2002	*Projected* Average Daily Traffic Volume 2020
Intersection			
Frank Lloyd Wright and Loop 101	Not reported	69,800	Not reported
Bell Road and Loop 101	Not reported	17,200	Not reported
Bell Road and Thompson Peak Parkway	9,300	8,400	Not reported
Segment			
Frank Lloyd Wright from Loop 101 to North 90th Street	39,000	43,000	42,000
Bell Road from Loop 101 to Thompson Peak Parkway	9,300	7,700	14,000
Thompson Peak Parkway from McDowell Mountain Ranch Road to Frank Lloyd Wright	9,000	23,000	41,000
Thompson Peak Parkway from McDowell Mountain Ranch Road to Bell Road	Not reported	4,800	37,000

SOURCE: City of Scottsdale 2003a

WestWorld, including Special Event Traffic

Three roads allow entry into WestWorld, Pima Road, North 94th Street and McDowell Mountain Ranch Road. The entrances from Pima Road and North 94th Street can accommodate 1,000 to 1,500 vehicles per hour. The entrance from McDowell Mountain Ranch Road can accommodate 500 to 750 vehicles per hour. McDowell Mountain Ranch Road has a controlled access gate at the property boundary and is comprised of both two lanes (near the property boundary) and four lanes (near Thompson Peak Parkway). The access gate allows traffic to enter and exit WestWorld from McDowell Mountain Ranch Road. This gate is usually closed to keep neighborhood residents from using WestWorld as a "short-cut" to Pima Road. The gate is utilized to distribute special event traffic when necessary (usually for participants, not spectators).

In FY 00-01, WestWorld hosted 107 events with a total of 422 event days and had a total of 464,552 participants, exhibitors, and spectators at the property (City of Scottsdale 2003b). These events range in size and attendance, with some of the events requiring traffic control measures such as pre-event meetings and on-site traffic management staff. The WestWorld staff manages all special event traffic, a majority of which occurs from Thursday through Sunday; Monday and Tuesday are typically breakdown and clean-up days. For large events, the traffic management is coordinated through Scottsdale's Special Event Committee, which includes representatives of the Police and Transportation Departments. For large events, the user must submit a traffic management plan to WestWorld staff and the Special Event Committee for review and approval. WestWorld management staff estimate that approximately 15 percent of the events require detailed traffic management plans (Gessner 2003).

3.8.2 Environmental Consequences

No-Action Alternative

If the No-Action Alternative were chosen, traffic and transportation conditions would change consistent with expected growth in the north Scottsdale area. Special events scheduled for WestWorld would be continue to be managed with traffic control plans that are coordinated with WestWorld staff, Scottsdale's Special Event Committee and Police and Transportation Departments on an event-by-event basis. Event related traffic would continue to occur from Thursday through Sunday.

General traffic in the area would increase due to increased growth in the general vicinity of the WestWorld site. Maricopa County Association of Governments (MAG) projected traffic volumes are reported in Table 3-9 and show a general trend of increased traffic in the area of WestWorld.

As part of the McDowell Mountain Ranch Aquatic Center project (located east of the WestWorld property), several roadway improvements have been proposed. According to the traffic impact analysis associated with the Aquatic Center project, the proposed changes would improve traffic flow in the areas of McDowell Mountain Ranch Road and Thompson Peak Parkway as well as McDowell Mountain Ranch Road and North 102nd Street. Further development north of Bell Road is planned and street improvements (development of North 94th Street and Thompson Peak Parkway) associated with this development will allow further access to WestWorld from the north.

Proposed-Action Alternative

General traffic in the project area is expected to increase due to increased growth in the general vicinity of the WestWorld site. It is not anticipated that the attendance at events at WestWorld would increase as a result of the Proposed Action; however, frequency of events would increase due to the improved facilities. Current and additional special events scheduled for WestWorld would be managed with traffic control plans that would be coordinated with WestWorld staff, Scottsdale's Special Event Committee and Police and Transportation Departments on an event-by-event basis. Due to the increased number of events and spectators associated with the improved facilities, an estimated 25 percent of the events could require detailed traffic control plans, particularly if more than one event were occurring at the same time (Gessner 2003). Similar to the existing conditions, most event traffic would be expected to occur from Thursday through Sunday. Traffic-related impacts resulting from special events would be minimized through the development and implementation of these plans. Short-term and temporary impacts would be expected to occur during large-scale events. Daily, routine traffic patterns would not be impacted because day-to-day operations would only marginally increase the daily number of vehicles to and from WestWorld.

Modified-Action Alternative

Transportation and traffic impacts under the Modified Action would be comparable to those described for the Proposed Action. However, the outdoor theater would not be built and fewer events would occur compared to the Proposed Action.

Cumulative Impacts

General traffic in the area is expected to increase due to increased growth in the general vicinity of the WestWorld site. As part of the McDowell Mountain Ranch Park and Aquatic Center (located east of the WestWorld property), several roadway improvements have been proposed. According to the traffic impact analysis associated with the Aquatic Center project, the proposed changes would improve traffic flow in the areas of McDowell Mountain Ranch Road and Thompson Peak Parkway as well as McDowell Mountain Ranch Road and North 102nd Street.

In response to the growth immediately north of the site, some roadways have recently been developed or are in the process of being improved. Because of these road improvements, cumulative impacts to traffic are not expected to occur in the project area. However, temporary and short-term traffic impacts may occur if special events at WestWorld and the aquatic center happen simultaneously and are not coordinated. WestWorld staff will ensure that traffic-related impacts of other special events happening concurrently in the north Scottsdale area are taken into consideration when special event traffic control plans are formulated.

3.9 NOISE

3.9.1 Affected Environment

Noise Regulations and Standards

Presently, there are no universal standards or policies for recreational noise levels. The most widely accepted land use related noise standards are those of the U.S. Department of Transportation's Federal Highway Administration (FHWA) and the U.S. Department of Housing and Urban Development (HUD).

The FHWA noise guidelines (23 CFR 772) for residential, recreation, and picnic areas specify a maximum noise level of 67 Leq(h). Leq(h) represents the equivalent, steady state sound level expressed in A-weighted decibels (dBA), which, on an hourly basis, contains the same acoustic energy as the time-varying sound level during the same period.

The HUD noise guidelines (24 CFR 51 B) for residential areas specify a maximum noise level of 65 Ldn. Ldn represents a 24-hour day-night noise level expressed in decibels. In calculating an Ldn noise level, a penalty of 10 dBA is added to noise occurring between the hours of 10:00 p.m. and 7:00 a.m. to represent the greater perceived impact of noise during these hours.

Scottsdale Ordinance 455, Section 5.2808, regulates noise from western theme parks. In summary, the ordinance outlines specific noise levels to which theme park activities must adhere during operation. These noise levels are to minimize and avoid, if possible, "intrusive noise" extending to surrounding land uses. The ordinance states that park activities should not create a noise level in excess of the ambient noise level or the exterior noise level standards (outlined in the ordinance), whichever is greater. The ordinance also specifies compliance requirements for activities and events held at western theme parks. It is included in Appendix A of this document.

Ambient Conditions

WestWorld is located in an area that until recently, has been fairly undeveloped. Extensive, recent development in the area includes commercial, industrial, institutional (schools), recreational (parks), and some high-density residential (apartments). Residences, hospitals, libraries, recreation areas, and other similar uses are generally considered to be sensitive to noise.

Sensitive receptors in the area consist of residential areas located west of Loop 101, south of the CAP canal and northeast of the property. The factors potentially contributing to the ambient noise in the project area are summarized below.

WestWorld

Daily noise levels at the WestWorld site are low and most likely not discernible to surrounding land uses. Daily activities on site consist of general maintenance, some light traffic, and event preparation activities. During events or activities at the WestWorld site, noise levels are increased due to additional traffic in the area, loudspeaker announcements, crowds of spectators, live music venues (e.g., the Bird's Nest, which is associated with the Phoenix Open), and other event related activities.

Traffic

As described in previous sections, the project area is under intense development, taking on the characteristics of a typical urban/suburban setting and thus is exposed to typical urban/suburban noise sources. Loop 101 is approximately 400 feet directly west of the project area and traffic noise from this facility is noticeable at all locations within the project area. Michael Baker, Jr., Inc. prepared a Traffic Noise Impact Analysis for Scottsdale in July 2003, which analyzed traffic noise impacts in the areas surrounding Loop 101 in Scottsdale (City of Scottsdale 2003c). The analysis of noise impacts considered roadway design plans, traffic volumes, land uses, and existing noise levels. Measurements were taken at various times and locations along Loop 101 between January 21 and February 18, 2003. Noise levels associated with Loop 101 are likely to be highest during the morning hours when southbound traffic is heavy. According to the study, ambient noise levels at the WestWorld site range from 67 dBA at the western portion of the property (near Loop 101) to less than 61 dBA toward the middle and eastern end of the property. According to the analysis, these noise levels are consistent with common outdoor noise levels in commercial areas (60 to 70 dBA).

In addition to the Loop 101 transportation corridor, arterial, collector, and local roadways, all of which may contribute to traffic noise in the vicinity, surround the project area. Pima Road borders the WestWorld property to the west, North 94th Street intersects the property to the north, and McDowell Mountain Ranch Road intersects the property to the northeast. Frank Lloyd Wright Boulevard is located approximately 600 feet to the south of the property; however, the CAP canal and the levee protecting the canal are located between the roadway and the property. Maintenance traffic activity on the levees associated with the CAP canal occurs intermittently.

Surrounding Facilities

Noise from events at Notre Dame Preparatory (with three lighted ballfields), located to the northeast of the property, may occur periodically throughout the year and may consist of children at play, whistles from sporting events, and music. Facilities north of WestWorld and generally fronting Bell Road include an ice skating rink, small commercial uses, and multi-family residential uses. Noise from these facilities is not expected to be noticeable on WestWorld property, due to the enclosed nature of these facilities. A fire station is located at the intersection of Bell Road and Thompson Peak Parkway. Intermittent noise from emergency vehicles may be discernible in the project area. The Scottsdale Airport is located approximately 1.5 miles southwest of WestWorld, with runways oriented northeast to southwest. Based on a consolidated flight track map available for the Scottsdale Airport, several flight paths cross WestWorld. However, aircraft noise from flights traveling to or from Scottsdale Airport does not exceed 65 Ldn beyond the airport boundaries (Scottsdale 1993).

Construction

Currently the general area surrounding WestWorld is experiencing a great deal of development. Areas north of the site are being developed for commercial and light industrial uses and a new residential community is being developed north and east of the property. Road improvements associated with development also add to the ambient noise in the area. Additional development activities in the general area are possible and thus construction noise is always a possibility.

3.9.2 Environmental Consequences

No-Action Alternative

Existing noise levels in the project area are influenced by current operations and events on the WestWorld property as well as operations and activities at surrounding facilities such as schools, airport, roadways, emergency services, and commercial development. Construction noise from development in the surrounding area is expected to increase intermittently as growth and development in the area continues. Noise from ongoing activities and events in the surrounding area would continue to occur and would increase as development continues in the area. Noise from operations, activities, and events at the WestWorld site would continue at current levels. According to results of the noise analysis conducted by Michael Baker Jr., Inc., the noise levels in the area are not anticipated to increase significantly over the next 20 years.

Proposed-Action Alternative

Ambient noise in the area would be a combination of the following sources.

WestWorld

- **Operations –** When the Proposed Action is operational (phased in over a 10-year period), increases in the numbers of activities and events at the site are expected. Additional events would increase the number of days with event noise, which would result in increased ongoing operational noise. However, because the multipurpose building would be enclosed and several of the arenas would be covered, event-generated noise would be less discernible to the surrounding land uses. For example, the Bird's Nest would be moved into the multipurpose building, to minimize noise impacts on nearby residential areas. The outdoor theater is expected to host concerts and other performing arts events that would produce noise in the form of music, microphone announcements, and spectator noise. Noise from theater events may be discernible to neighboring properties; however, the direction of the theater (facing Loop 101) should minimize noise impacts from events on nearby residential areas. The roadway and the earthen berms around the canal should aid in muffling or muting noise from events at the site. Noise from most events at the site would be intermittent, short in duration, and would rarely take place between 10:00 p.m. and 7:00 a.m.

  In accordance with Scottsdale ordinance 5.2808 an Acoustical Analysis Report and Noise Control Plan may be needed for this facility. The ordinance states,

  > *"An Acoustical Analysis Report … shall be submitted with the application for a building permit. Such report shall be required for all activities declared by the architect or engineer or the Development Review Board to generate noise levels which may exceed the limits specified in section 5.2808.1."*

  In addition, a noise control plan may be needed for activities and events held at the outdoor theater and possibly other facilities at the site. The plan would outline administrative controls that would be in place to help control noise. The plan would be submitted to the DRB. Compliance requirements for both the Analysis Report and Noise Control Plan are outlined in the Scottsdale Noise Ordinance found in Appendix A.

- **Construction –** Additional noise associated with construction of the proposed facilities would occur and most likely be discernible to surrounding properties. Though construction is planned in phases over a 10-year duration, construction-generated noise associated with the new facilities would be intermittent and temporary. Noise generating construction activities are exempt from the noise ordinance outlined above *"provided that construction activities take place between the hours of sunrise to sunset on weekdays, including Saturday or at any time on Sundays, or a federal holiday." (Section 5.2808)*

Traffic

The July 2003 Traffic Noise Impact Analysis shows no significant change in traffic noise impacts through the year 2022 associated with Loop 101; however, this study did not specify whether it accounted for additional events occurring at WestWorld and the noise that would be generated from increased events and event traffic. As the surrounding area is developed, local traffic is expected to increase on surrounding arterial and connector roads adding to ambient noise levels. Traffic-related noise from additional events at the WestWorld site would increase; however, only traffic from large events would be potentially discernible to surrounding properties. Because of their distance, the sensitive receptors identified in the project area would not be influenced by additional noise associated with increased traffic to the site.

Other Ambient Noise Sources

Construction noise from development in the surrounding area is expected to increase as growth and development in the area continue. Commercial development to the north of the project area would probably account for the majority of ambient construction noise in the area as well as any potential street improvements associated with the growth in the area. The increase in construction noise related to the development north of the project area is not correlated to the Proposed Action. Airport noise conditions should not change as a result of the Proposed Action. Emergency services in the area produce intermittent noise in the surrounding area but should not change as a result of the Proposed Action. Additionally, noise from schools and recreational facilities in the area should not change as a result of the Proposed Action.

Modified-Action Alternative

Noise impacts for the Modified Action would be similar to those in the Proposed Action with one exception. In the Modified Action, the outdoor theater would not be constructed and therefore noise related to events such as concerts, plays, and other on-stage activities would not occur.

Cumulative Impacts

Construction noise from development in the surrounding area is expected to increase as growth and development in the area continues. Commercial development to the north of the project area would probably account for the majority of ambient construction noise in the area as well as any potential street improvements associated with the growth in the area. The increase in construction noise related to the development north of the project area would not be correlated to the Proposed or Modified Actions. However, construction-related noise associated with the Proposed or Modified Action would add to the overall construction-generated noise in the surrounding area. This cumulative increase in noise would be temporary and intermittent. Construction noise would be intermittent, short in duration, and rarely take place during sensitive hours of the day (10:00 p.m. and 7:00 a.m.).

3.10 CULTURAL RESOURCES

3.10.1 Affected Environment

The specific cultural resources addressed in this section include archaeological, historical, and traditional cultural sites, buildings, structures, districts, and objects that reflect local, regional, and national heritage.

Data Collection

The computerized AZSITE Cultural Resource Inventory was reviewed for information about prior cultural resource studies and previously recorded archaeological and historical resources within the area of potential effect (AZSITE Consortium 2003). This database includes information from the files of the Arizona State Museum, Arizona State University, Museum of Northern Arizona, and State Historic Preservation Office (SHPO), including information about sites on the National and State Registers of Historic Places. Other information was obtained from the files of the Arizona State Museum, SHPO, and Arizona State Land Office.

Resource Overview

Human societies have lived in Arizona for approximately 13,000 to 14,000 years and perhaps longer. For three-fourths of that time, small, dispersed nomadic groups lived off the land by hunting game and collecting native plant foods. As subsistence strategies shifted to farming domesticated plants such as corn, beans, squash, and cotton, populations grew and became more sedentary, residing in larger villages and towns. The farmers of this era in central Arizona are known as the Hohokam, and as they occupied the area from approximately A.D. 1 to 1450, they became the most sophisticated irrigation agriculturists in North America.

When Europeans first explored the Salt River Valley in the eighteenth century they found the Hohokam villages in ruins and the irrigation systems long abandoned. The valley was essentially an unoccupied zone at the boundary of the territories of the Akimel O'odham (Pimas) and Pee Posh (Maricopas), who lived in several villages along the Gila River to the south, and the Yavapais and Apaches, who ranged to the west, north, and east. The Spaniards and Mexicans never settled in the Salt River Valley during the time they claimed sovereignty over the region from the sixteenth through the mid-nineteenth centuries. The pace of Euro-American settlement quickened only after the United States acquired the territory in the mid-1800s. Farmers began developing irrigation systems among the ruins of the ancient Hohokam canals in the late 1860s, and the Phoenix townsite was platted in 1870. The region continued to grow as an agricultural area, a service center, and seat of government, exploding after World War II into one of the largest metropolitan areas of the United States.

Prior Studies

The records review identified information about eight cultural resource surveys that encompassed parts of the project area or immediately adjacent parcels (Table 3-10). Three of these studies were conducted during the planning of the Hayden-Rhodes Aqueduct, then known

as the Granite Reef Aqueduct. One survey was for the original development of WestWorld, then known as Horseman's Park. Three surveys were for adjacent residential or commercial developments, and one was for a power line project.

TABLE 3-10
PRIOR CULTURAL RESOURCE STUDIES

Project Name/Number	Scope	Results	Reference
Granite Reef and Salt Gila Aqueducts feasibility survey	6,960 acres	13 sites located, none in project area	Dittert and others 1969
Granite Reef Aqueduct feasibility alignment survey 1972-5.ASM	2,585 acres	32 sites located, 57 isolated finds, site AZ U:5:14 (ASM) in project area	Kemrer and others 1972
Granite Reef Aqueduct Reach 11 detention basin survey 1978-64.ASM	1,550 acres	4 sites located, 26 isolated finds, no sites in project area	Brown 1978
Horseman's Park survey 1988-109.ASM	80 acres	1 site, AZ U:5:28 (ASM), within project area	Ritz 1988
Thompson Peak Substation survey 1994-51.ASM 7.3360.SHPO	4 acres	5 isolated finds, recorded segment of previously identified historic Rio Verde Canal	Douglas 1994
Land Research II development parcel survey 2000-235.ASM	36 acres	3 isolated finds, recorded segment of historic Rio Verde Canal	Courtright 2000
COS First Industrial development parcel survey 2001-77.ASM	37 acres	1 isolated find, recorded segment of historic Rio Verde Canal	Lonardo 2001
Omega 67 development parcel survey 2001-730.ASM	79 acres	1 site outside of project area, recorded segment of historic Rio Verde Canal	Webb 2001

Recorded Cultural Resources

The prior studies identified three cultural resources within the WestWorld project area, as described in the following sections.

Rio Verde Canal, AZ T:8:65 (ASM)

In 1889 grand plans to irrigate the entire northern segment of the Phoenix Basin were proposed, and by 1892 the Rio Verde Canal Company was incorporated to pursue the project. The plans envisioned a major storage dam on the Verde River and three or four smaller dams on smaller intermittent streams to the west, as well as 140 miles of main canals. By the end of 1892, a diversion tunnel had been completed at the dam site on the Rio Verde River and a segment of the main canal, variously reported as about 12, 18, or 25 miles long, had been excavated in Paradise Valley (Ciolek-Torrello 1982; Ellis 1996; Introcaso 1990). Project promoters encountered financial difficulties the following year, and although they struggled for more than 40 years to revive the project, they eventually lost contested water rights to the Salt River Project. Although

Horseshoe and Bartlett dams were then constructed on the Verde River as part of the Salt River Project, the planned Rio Verde Canal was never completed.

Urbanization and erosion have destroyed most of the remnants of the unfinished Rio Verde Canal, which was excavated more than a century ago. In 1996, Reclamation consulted with the SHPO about the Sanctuary Golf Course, which is located less than ½ mile to the southeast of WestWorld (Ellis 1996). Reclamation concluded that the remnants of the Rio Verde Canal within the proposed golf course were eligible for listing in the National Register of Historic Places under Criterion A because of association with water resource development in the Salt River Valley, and under Criterion B because of associations with Augustus C. Sheldon and Prosper P. Parker, key officers of the Rio Verde Canal Company who were prominent in promoting irrigation development in the Arizona Territory.

As a result of the consultations, Reclamation stipulated that the golf course be designed to preserve and interpret segments of the Rio Verde Canal with signs and a brochure. The consultations also determined that no original drawings or plans of the canal had been identified and none were likely to exist, but that the history of the proposed development had been adequately documented in a Historic American Engineering Record study prepared for Bartlett Dam (Introcaso 1990). Reclamation also documented segments of the canal on Federal land with large-format photographs.

While no portion of the historic Rio Verde Canal is located within the existing WestWorld boundaries, portions of it are located on the adjacent State Trust Land parcels to the north. These parcels of State Trust Land encompass two segments of the alignment of the historic Rio Verde Canal totaling approximately 1,900 feet. The swales of these canal segments retain runoff, and desert trees and shrubs have grown along the alignment, mimicking natural vegetation found along desert washes.

Archaeological Site AZ U:5:14 (ASM)

Archaeological site AZ U:5:14 (ASM) was recorded in 1972, and described as consisting of historic tent foundations and scattered historic trash. Two groups of at least six rectangular rock alignments presumably served as foundations for tents used by work crews who excavated the Rio Verde Canal (Kemrer and others 1972). The mapped location of the site is on State Trust Land, but the site was searched for in 1978 and not found (Brown 1978). A subsequent 1988 survey of the parcel of State Trust Land where the site was plotted also did not identify the site (Ritz 1988).

Archaeological Site AZ U:5:28 (ASM)

Archaeological site AZ U:5:28 (ASM) was recorded in 1988 on State Trust Land adjacent to 230kV transmission lines that cross the proposed northern expansion of WestWorld. The site was described as three concentrations of Hohokam pottery sherds (Ritz 1988). In 1989, ASLD staff, working with volunteers from the Desert Foothills Chapter of the Arizona Archaeological Society, conducted data recovery excavations at the site. Backhoe trenches were dug and other units were excavated by hand (Kenny 1989).

Two rock piles were the only features identified, and approximately 150 plain ware pottery sherds and a few decorated sherds were recovered, indicating the site was briefly occupied approximately 700 to 900 years ago. Pieces of a bracelet made from marine shell also were recovered. Analyses of pollen and macrobotanical remains failed to yield any evidence of plants that may have been grown or processed at the site (Kenny 1989). After the site excavations were completed, ASLD issued a special land use permit to Scottsdale for construction of an overflow parking area at Horseman's Park (now WestWorld), and much of the area was mechanically bladed.

Summary

In summary, prior studies have covered the entire WestWorld project area except for a triangular 5-acre parcel of land between the Federal lands managed by Reclamation and adjacent parcels of State Trust Land. Three resources have been recorded within the project area, including archaeological sites AZ U:5:14 and 28 (ASM), and the historic Rio Verde Canal, designated as AZ T:8:65 (ASM).

Archaeological site AZ U:5:14 (ASM) has not been re-located since it was originally recorded in 1972. The site does not appear to be within the WestWorld project area because subsequent surveys have failed to relocate the site on Federal land within the Reach 11 Detention Basin or on the adjacent parcels of State Trust Land. Archaeological site AZ U:5:28 (ASM) was excavated in 1989, and subsequently the area was bladed and used for overflow parking. In 1995 ASLD, in consultation with the SHPO, concluded that no significant components of the site remain intact. At that time ASLD also concluded that the segments of the historic Rio Verde Canal within the WestWorld project area were not eligible for the National or Arizona Registers of Historic Places (Rozen 1995). The SHPO concurred with the ASLD evaluations and conclusion that these resources warranted no further preservation efforts.

Other recent investigations along Mayo Boulevard northwest of WestWorld have discovered early archaeological materials buried by a meter or more of sediments. There were few clues on the ground surface about the presence of these sites, which date from the early Pioneer period of the Hohokam occupation and the older preceding Archaic era (Hackbarth 1998). Conceivably, similar buried archaeological materials might be present within the WestWorld project area; but there are no indications of such sites and there is no effective method for predicting the presence of such deeply buried remains.

3.10.2 Environmental Consequences

Because WestWorld is on Federal land managed by Reclamation, the proposed revision of the master plan for facility improvements is a Federal undertaking as defined by regulations for *Protection of Historic Properties* (36 Code of Federal Regulations [CFR] Part 800). These regulations implement Section 106 of the National Historic Preservation Act. Potential impacts on historic properties were considered in accordance with those regulations. Historic properties are defined as any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places (36 CFR Part 800.16(l)). Part of the proposed expansion of WestWorld entails acquisition of State Trust Land. In disposing of

State Trust Land, the ASLD must consider impacts on properties listed in or eligible for the Arizona Register of Historic Places in accordance with the State Historic Preservation Act. The criteria for listing in the National and Arizona Registers of Historic Places are essentially the same. The documentation in this EA is intended to support the Reclamation and ASLD in complying with the National and State Historic Preservation Acts, respectively.

No-Action, Proposed-Action, and Modified-Action Alternatives

There are no historic properties within the area of potential effect of the No-Action, Proposed-Action, or Modified-Action Alternatives. Therefore, for any of the alternatives discussed, the project would result in no impacts.

If interest in any land is acquired and incorporated into the project, Reclamation will ensure that it is intensively surveyed for cultural resources, and consult with the SHPO prior to project implementation. The 5-acre parcel would be surveyed prior to commencement of any land disturbing activities. Because the parcel has been bladed, the potential for significant archaeological resources is low. If cultural resources should be discovered unexpectedly during construction or operation of the project, Scottsdale will notify Reclamation and consulting parties would be notified within 48 hours. The find would be evaluated as a post-review discovery and treated to resolve any adverse effects in accordance with regulations for *Protection of Historic Properties* (36 CFR Part 800.13).

Cumulative Impacts

No cultural resources have been identified in the project area; therefore, no cumulative impacts are expected.

3.11 UNAVOIDABLE ADVERSE EFFECTS

Short-term unavoidable adverse impacts to air quality and biological resources are possible from construction of the proposed facilities and improvements. Mitigation measures should minimize impacts to air quality from dust; however, some residual dust emissions from construction activities are possible. Removal of vegetation and clearing would impact the vegetation and wildlife habitat on the State Trust Land and 5-acre parcel to the north of the WestWorld property; however, impacts would be minimized through relocation of native vegetation elsewhere on the site.

Potential unavoidable adverse visual impacts could occur due to the facility improvements outlined in both the Proposed and Modified Actions. Current surrounding residential and commercial properties as well as potential future residential and commercial development could have direct views of the WestWorld property and facilities. These facilities should not, however, block views of the McDowell Mountains.